

# MONTHLY JOURNAL OF AGRICULTURE.

VOL. III.

MARCH, 1848.

NO. 9.

## MISCELLANEOUS NOTES AND EXTRACTS

### ON A VARIETY OF SUBJECTS.

AN absence, longer than usual at this season, has brought an accumulation of agricultural contributions, in various forms, which, as yet, we have not had time to examine, much less to digest. It will need some share of diligence to look it over and turn it to account, before a fresh supply will come to demand the same attention.

We do not know how a few pages may be occupied in a manner more likely to entertain and benefit the reader, than by stringing together, as we go along, such items as may appear to be adapted to the season, and to the circumstances and uses of the greatest number of our patrons. With these objects and considerations in view, it will be allowable just now to say more about the *Potato* than has been our custom, since of all esculents there is none so universally cultivated, and moreover the time for planting for early use is at hand.

We may begin by premising that a gentleman lately informed us that, whatever doubts may, and certainly do, still exist as to the cause of the *Potato* malady—in the neighborhood of Philadelphia, where the subject has so attracted particular notice as to lead to some investigation, there are some points which experience appears to have settled as tending to give a better chance of a saving crop—as, for instance, liberal manuring, and *early and deep planting*.

Mr. Gowan, the well and widely known patron and exemplar of agricultural improvements, has given particular attention to this subject, and it is said made, last year, a crop of 1,500 bushels of the finest quality. Our informant stated that he had lately refused \$500 for 500 bushels. Supposing an acre to be sufficiently well manured to produce 60 bushels of Indian corn, may it not be said that it would yield 200 of potatoes? The former at 60 cents would be worth \$36 to the acre, while the latter at \$1 would yield \$200. Now who will give us a calculation as to the difference in the labor and cost of cultivation and transportation to market, so as to arrive, as nearly as may be, to the net profit? As a general thing it would, perhaps, not be safe, however, to count upon more than 100 bushels of potatoes to the acre, nor on a price exceeding 50 cents on the farm.

As, however, the *Potato* disease was extensive the past season, and appears to be spreading southward in the United States, it may be useful to many to learn the result of experience as we find it detailed in the papers before us.

The first communication is that of a writer who relates in the London Garden-er's Chronicle :

"For the last three years, during which time the Potato crop has been so extensively affected by the prevailing disease, my attention has been drawn to a method of cultivating that plant, practiced by a gentleman whom I have known for the last 20 years to have been a large and successful grower. His *unvarying success* can evidently be attributed to nothing more than the strict observance of a few simple rules of cultivation. In the first place, he has been very particular in selecting and retaining only such sorts as arrive at early maturity, and are of superior quality ; also such as are not liable to rot *after cutting* (for he divides his sets), thereby planting double the breadth of land with an equal measure of tubers. They are planted in rows which are 26 inches apart ; the sets 1 foot distant from each other. The time preferred for planting is from the second week in February to the last week in March. They are deposited 3 inches deep from the surface of the land, and then immediately earthed up on one side to the height of 4 inches, leaving the *sets 7 inches buried* (by this method the wet is drained off from the sets, which are also well secured from frost). At the end of April or beginning of May, according to the variations of the seasons, the rows are leveled down by means of a harrow or rake, and, after the potatoes become sufficiently strong, they are moulded up in the usual way. I may add that he is not an advocate for early digging ; he generally leaves them in the ground till late in autumn. His plan of storing is to have them placed in very narrow ridges on the surface of the ground, banked up with earth, and well covered with straw or fern ; and by this plan fermentation is in a great measure obviated.—By the observance of the above rules this gentleman has been enabled to obtain, during the last three seasons, crops as abundant and fine as the same land, on an average, ever before produced ; and this present season he has produced a crop of 1,400 sacks of sound potatoes from 21 acres of land ; his usual quantity of seed is 4 sacks per acre. MARTIN MAYES.

*Durdham-down Nursery, Bristol."*

There is one objection to drawing inferences from English accounts, to influence American practice, which floats on the surface and is so apparent that the dullest vision may see it—arising from *difference of climate*. Now, though that may teach us that Carolina is not much better adapted to turnips than England to sweet potatoes, yet it does not warrant the conclusion that the same causes which produce the Potato rot in England would not produce it, where they are present, in the United States, nor forbid us believe that a remedy or preventive in one country would prove equally effectual in the other.

The objection we should make, or the doubt which arises to the suggestion of this writer, is, in our judgment, to the gentleman's practice in cutting his potatoes in sets or slips. Although experience has proved, it seems, that they do well, may it not be reasonably believed that whole potatoes would do better, to at least the amount in the difference in the expense of seed ?

Here, in this extract, we encounter again a perplexity (which it has been our aim as much as possible to obviate), arising from the *difference in our and in English weights and measures*. On this point of uniformity in weights and measures, as well as in simplicity and uniformity of language, and freedom from provincialisms, we seem to have made more progress than the "mother country," where the greatest diversity and confusion prevail.—How much is a "sack" ? says the reader, wishing to see how many bushels are considered a fair crop of potatoes in England.

Turning, then, to a little book of reference, much of which will be copied in our journal, we find the following Table. By a late act of Parliament, the legal stone is in all cases to consist of 14 pounds avoirdupois ; 8 such stone 1 cwt. ; 20 cwt. 1 ton. In wheat measure a *sack* is four bushels.

	Cwt.	qrs.	lbs.		Cwt.	qrs.	lbs.
8 pounds 1 stone.*				6½ tods 1 wey†	1	2	14
14 pounds 1 stone†	0	0	14	2 weys 1 sack†	3	1	0
2 stone 1 tod†	0	1	0	12 sacks 1 last†	39	0	0

At this rate, 1,400 sacks were equal to 509,600 pounds of potatoes—which, divided by 21, the number of acres, and that again by, say, 50, for the pounds in a

\* Used for meat.  
(818)

† Used in the wool trade.

bushel of potatoes, and we have 485 bushels to the acre. Here, again, as it is said constant dropping weareth away stones, a line may be taken to urge the propriety of municipal, if not legislative measures, to cause all common marketable commodities to be *sold by weight*—even ducks and chickens should be so sold.

It has often been a matter of amusement, less than surprise, to find how a very large proportion of practical farmers may be confounded by putting to them questions which their every-day transactions require that they should be able to answer at a word. There is, for instance, not one in twenty that can tell the ordinary weight of a bushel of potatoes or buckwheat, or of a horse-cart, or a bushel of oysters. Yet for many and obvious reasons they ought to know the ordinary weight of everything to be transported on or from their farms upon the road.

The following Tables may be of some practical use to a greater number than may be willing to acknowledge it. By-the-by, we would recommend every farmer to keep a *scrap-book*, in which everything of this sort which he meets with in *his party* newspaper (and many neither take nor read any other) might be pasted and preserved. Let it be paged and given in the keeping of the good housewife, who, on the least hint, with her ever ready scissors at her side, will cut out what is indicated, and paste it in the book; and then the farmer himself, or his son, some rainy day, when kept from school, can make an *index* according to the subject, so that any particular matter may be readily referred to. But here are these homely Tables:

ST. LOUIS WEIGHTS OF PRODUCE.—NUMBER OF POUNDS AVOIRDUPOIS TO THE BUSHEL.

Wheat .....	60	Flax-seed.....	55	Buckwheat-seed.....	52
Beans, except Castor Beans.	60	Barley.....	48	Castor Beans.....	46
Clover-seed .....	60	Oats.....	35	Hemp-seed.....	44
Potatoes .....	56	Onions.....	57	Blue-Grass-seed .....	12
Rye.....	56	Dried Peaches.....	33	Timothy-seed.....	45
Corn .....	56	Dried Apples.....	24	Salt .....	50
Bran.....					20

One bushel of Charcoal shall be equal to five pecks.

One bushel of Lime shall be equal to five pecks.

The reader will, of course, understand that these are *standard* weights; and, when the article really weighs more or less, the payment is regulated by this standard.

A VALUABLE TABLE.—The following Table, compiled from the calculations of J. M. Garnett, Esq., of Virginia, will be found exceedingly valuable to many of our mechanical readers:

A box 24 inches by 16 inches square, and 22 inches deep, will contain a barrel, or 10,852 cubic inches.

A box 24 inches by 16 inches square, and 11 inches deep, will contain half a barrel, or 5,426 cubic inches.

A box 16 inches by 16·8 inches square, and 8 inches deep, will contain one bushel, or 2,150·42 cubic inches.

A box 12 inches by 11·2 inches square, and 8 inches deep, will contain half a bushel, or 1,075 cubic inches.

A box 8 inches by 8·4 inches square, and 6 inches deep, will contain one peck, or 536·1 cubic inches.

A box 8 inches by 8 inches square, and 4·2 inches deep, will contain one-half peck, or 267·0 cubic inches.

A box 7 inches by 4 inches square, and 4·8 inches deep, will contain half a gallon, or 131·4 cubic inches.

A box 4 inches by 4 inches square, and 4·2 inches deep, will contain one quart, or 67·5 cubic inches.

To return to the potatoes—it seems to be understood that pains should be taken, in putting them away, to secure them not only against *wet*, but against the *heat* that proceeds from too large a bulk, and which promotes fermentation



and vegetation, and of course exhaustion before planting. We understand that the deep planting recommended in the English extract is confirmed by Mr. Gow-an's experience.

We shall doubtless meet with other practical hints on this subject as we go along, looking over the journals before us.

ENTOMOLOGICAL SOCIETIES.—Nothing has so much tended to promote progress in arts and industry, as the *division of labor*—the confinement of attention to a single branch; but there is in this respect great room for improvement in our country. Instead of having separate associations for the increase of knowledge in each branch of natural science, and in each art and industry, we undertake so many at once that nothing is half done.

Thus we have one society to exhibit and give premiums for sheep, and cattle, and fowls, and flowers, and plows, and bridles, and all sorts of products and manufactures—instead of dividing these objects, and carrying them all to a much higher state of melioration. We ought to have, for example, Veterinary Societies, for the improvement and care of the Horse—Societies expressly for the exhibition and improvement of Sheep and Wool—for the Grape Culture and Manufacture of Wine—and various other things. Why not, particularly it may be asked, an *Entomological Society*?

We are reminded of this at the moment by seeing, in the paper already referred to, the following—which shows that we may go to London for a better knowledge even of the insect destructive to our own great Southern staple; and that a Society *there* is taking measures to have observations made on its habits, by a citizen of still another country in Europe, now traveling in the United States! Is it that nothing has attraction for us, with all our vain-boasting, that may not be *at once* converted into the almighty dollar, unless it be *military* glory!

"Dec. 6.—W. SPENCE, Esq., F. R. S., President, in the Chair. Mr. Spence communicated a note from Rev. Mr. Meadows, of Winesham, near Ipswich, accompanied by specimens of *Bruchus granarius*, which has proved especially destructive to crops of green Maza-gan Beans in Suffolk, at least one-third of the crop being attacked in some places. He also stated that the Turnip crop had suffered to a great extent from the ravages of the grub of *Agrotis segetum*—adding that part of a field, which had been dressed with "*burnt earth*," at the rate of about 60 cart-loads to an acre, had *entirely escaped*; but that the remainder of the field, manured with London manure at the rate of about 20 cart-loads to an acre, had been greatly attacked."

Mr. Spence read a note relative to several species of insects which infest the *Cotton crop* in North America, and suggested that the subject was very worthy of the attention of entomologists—nothing definite having been hitherto recorded, and the successful cultivation of the crops of that article having so great an influence on the prosperity of our manufacturers, and that more especially since vigorous attempts were now making to grow the Cotton in our Indian territories (the plants being introduced from America). It was, therefore, resolved that the celebrated entomologist, Dr. Schaum, now in North America, should be requested to direct his attention to the subject, on behalf of the Entomological Society."

EFFECT OF TURNIPS ON EWES IN LAMB.—Mr. Robinson (Veterinary Professor in England) asserts—and his assertion seems to have attracted much notice—that "when lambing-ewes are allowanced a large quantity of turnips with a small amount of other food through the winter, abortion is a frequent occurrence; their supply of milk is very deficient, and their lambs are dropped of various sizes and far from healthy. If the ewes are allowed free access to salt, the lambs are still more unhealthy, and many die of indigestion and disease of the liver. The mortality of the lambs in these cases may, I think, be fairly attributed to the amount of salt taken by the dam; for admitting that a small portion only is directly given them, the quantity positively taken in their food in turnips is somewhat considerable." A Lincolnshire flock-master remarks on the above: "According to this it would appear we

\* See Gardeners' Chronicle, 1847, p. 442, for another instance in which a difference of manure operated as a check against the attacks of insects. Entomologists and agriculturists have not hitherto studied the effects of manures upon insects so carefully as is evidently necessary.



have been on a wrong system, and I am not quite so sure but to a certain extent this is so. Last lambing season vast quantities of lambs died, and ewes also in this county, but it was generally supposed to be the distemper, a disease that has been in this county to a fearful extent. Many persons last season, probably on account of the distemper, gave an increased quantity of salt to their flock, from an idea that it would check the distemper, which may in fact have destroyed both ewes and lambs, according to Mr. Robinson's theory. At all events it is a subject well worthy of consideration and discussion, and I trust these few remarks may attract the eye of more experienced persons than myself. If it shall be shown that this assertion of Mr. Robinson is right, and that turnips are injurious to a breeding-flock, the sooner the present system is abandoned the better, and corn or oil-cake must be given in lieu. I should add that the Swede turnip is usually pitted for lambing time, and the red and white tops consumed during the winter season."

EXHIBITION AND TRIAL OF AMERICAN IMPLEMENTS IN ENGLAND.—*Society of Arts*, December 8, T. HOBLYN, Esq., in the Chair. Mr. Slocum exhibited two plows, a scythe and cradle for reaping corn, a grass-scythe, three spring-tempered manure and hay forks, a cast-steel hand-hoe, and an ax of American manufacture. He stated the peculiarity of these implements to consist in their lightness, cheapness and durability, thus enabling the agricultural laborers to accomplish a larger amount of daily work at a less cost. The implements he exhibited were such as are commonly used in the United States. A letter was read from Mr. Love, of Manor House, Naseby, in which he states the plows were tried on a clay soil in rather a dry state against Adams's Northampton plow and one of Howard's Champion plows. Howard's, when working five inches deep by *eleven inches wide*, had a draught of thirty-one stones, and Adams's plow, at the same width and depth, a draught of thirty stones, while the American plow, at five inches deep and *fourteen wide*, drew only *twenty-six stones*. "In justice to the American plows, I must say," observes Mr. Love, "that they cut up and cleaned their furrow quite as well as the other plows, and also turned the earth completely, breaking it and putting the soil in capital position for drilling or dibbling; they are the most simple, strong, light and effective plows it is possible to conceive." Other experiments were also made, and the draught tested by the dynamometer. The cost of the plows Mr. Slocum stated to be £2 each.

Perhaps this may fall under the eye of some one who can tell from what manufactory the American implements, and particularly the plow, were sent.

It is believed that Mr. Colman was once present at a trial of American and English plows, where the decision was in favor of the latter. It were to be wished that our Societies would invite Mr. Ransome, the great improver and manufacturer of the best English plows, to send over one or more to be tested against the best American, such as are turned out from Prouty's or Ruggles & Nourse's establishments. Although not so attractive and exciting to the crowd at a Cattle-Show, as Tom Thumb and the monkeys, fat stallions and cows with three calves, musicians, and sheep with four horns, and other live animals, *improved implements* constitute everywhere the most valuable department, and deserve the continued and especial favor of all well-directed associations and efforts to promote improvements in American Husbandry; and truly the improvement has been wonderful, even within our recollection.

GUANO.—The writer of these notes distributed two barrels of Peruvian guano in Maryland twenty-five years ago, and endeavored to spread a conviction of its value, by giving translations from ULLOA & HUMBOLDT to show its efficacy and the manner of using it. It was admitted by one gentleman to be a powerful fertilizer, but nothing was done toward obtaining any farther supply. Now see what has been the progress in the use of it in England:

Ships entered.		Tons.	Ships entered.		Tons.
In 1841.....	7	1,733	In 1843.....	13	4,056
1842.....	41	12,000	1844.....	286	81,902
In 1845.....	679 ships entered, with 219,764 tons.				

We have no particulars before us coming down to this time. Guano is known to be the excrement of sea-fowl, deposited by them on many of the rocky islands of the Pacific and Atlantic during the breeding-season. Its price last year in England was quoted: Ichaboe, \$30 to \$40 per ton; Peruvian, \$50 to \$52,

according to quality. It varies in composition, and here, where we do not possess the science or the energy among agriculturists to provide for the scientific analysis of it, it is probable we are shabbed off with that of inferior quality. In Maryland, owing to the forecast of Mr. Naill, of the Senate, an Inspector has been appointed to examine that which is sold in the Baltimore market. In the House of Delegates of that State, Mr. Coad has moved to have an Agricultural Chemist appointed, but it would probably be much easier to get a Drill-Sergeant or a drummer and fifer to go through the counties, especially if dressed off in showy regimentals. The guanos of commerce have been analyzed in England by Professor J. F. Johnston. He found in these—

Kinds.	Water.	Ammoniacal matter.	Earthy phosphates.
Peruvian .....	7 to 9	56 to 66	16 to 23
Chilian .....	10 to 13	59 to 66	22 to 30
Bolivian .....	6	65 to 64	25 to 29
Ichaboe .....	18 to 26	36 to 44	21 to 29
Saldanha, light .....	17 to 27	14 to 22	43 to 56
.. dark .....	33 to 44		
Algoa Bay .....	2-26	22-37	70-20
.. ..	23-93	23-16	43-15
Halifax .....	24-47	20-61	22-67
Bird's Island .....	25-49	19 to 21	22-43
.. ..	14-18		5-37
Patagonian, light .....	40-99	20 to 25	24 to 32
.. dark .....	20-55		

Guano is undoubtedly a powerful manure when applied at the rate of from 300 to 500 pounds per acre, especially in wet seasons, and on moist soils.

A NEW PLANT, ADAPTED TO THE UNITED STATES, CALLED THE "DYER'S BUCKWHEAT."—At the same meeting of the Society of Arts, a communication was read from Mr. W. Taylor, F. L. S., &c., on the Cultivation of *Polygonum tinctorium*, or Dyer's Buckwheat:

"This plant," observes Mr. Taylor, "is a native of China, and was introduced into England in 1776 by John Blake. It is used in China and Japan for the purpose of dyeing a blue similar to that of the finest indigo. The color is obtained from the leaves of the plant, which are dried, pounded, and made into cakes. With these cakes, Thunberg says, they dye linen, silk and cotton. When the cakes are boiled, they add ashes, and the stronger the decoction is made, the darker the color. The plant grows best in England on soils of a medium texture, which must also be well manured before the seed is sown, which is best sown in rows about the middle of April. Two pounds of seed to the acre is sufficient, but the plants may be planted out in rows from the hot-bed, at the rate of 16,000 to the acre, and unless they are brought forward and planted out, they will not produce seed in England. The plant can be prepared for the market in three ways, viz.: 1st. It may be cut in a green state, and sold to the dyer, in which case an acre would produce 5 tons of leaves and stalks, worth about £30. 2d. If cut and placed in vats, so as to precipitate the 'fecula or indigo,' the acre would produce 3 cwts. of color, which at 1s. per lb. would be worth £16 16s. 3d. The plants may be cut up, dried, and packed in bundles; the acre would then yield 3 tons of dyeing matter, and be worth about £21. The coloring matter may be extracted by fermentation or scalding." Specimens of the plants and color were exhibited."

Here is another opportunity for the active vigilance and enterprise of the American Institutes to render, in all probability, an important service to the country. Their ever-wakeful "Committees of Importation," looking out for new plants and new implements, (for which the whole habitable globe is explored by European Societies,) will no doubt have ordered, through their alert agents in England, a few of the seed of this "Dyer's Buckwheat"; for if it can be matured to produce seed by the management described in England, it would doubtless succeed in all our Southern States. The preparation would seem to be very simple—cutting, drying and packing—and if, instead of yielding from \$100 to \$150 an acre, as stated, it should produce even the lowest sum named, \$90, it

might be made to supersede profitably many of our products, and the more we can diversify these, the more remunerating the product of them all.

Nothing of this kind should be allowed to escape the vigilance and energy of institutions acting in the name of the whole Union and, as such, supplied with ample funds, which, instead of being hoarded up, should be kept constantly employed. Though many things thus imported might prove to be without value, yet in a single case it would sometimes happen that more good would be done than by volumes of translations from Spanish, and Greek, and Latin, and French, of olden or of modern times, which better serve for display than real utility.

USE OF INDIAN CORN AS FOOD FOR STOCK IN ENGLAND.—The best opening, in our view, at present, for a great increase of demand in Europe for our great staple, *Indian Corn*, is in the prospect of having it take the place, especially in England, of *oil-cake* and other food, so largely employed there for feeding cattle. It is every way worthy of the attention of the many who are directly interested in the solution of the question. What is wanting is to find out, with all practicable exactness, at what price, per hundred or per ton, the two articles will meet each other, in competition, in the hands of the English farmer—then the nutritive and fat-making properties of each—and finally, the value which each imparts to the manure—a point which *English Farmers* look at with becoming solicitude.

Unfortunately, as to the nutritive qualities of a staple of which the last year we produced more than 500,000,000 of bushels, we have no school or scientific *agricultural* institutions, to which we can go to have that question settled with accuracy; nor at which we can learn, as in England, how much the use of any particular food will augment the value of the manure produced by it. But if, by any means, we could connect such investigations with the art and *purposes of war*, the Government provides amply for that. To the representatives of the *landed interest* in Congress there is nothing so exhilarating, no stimulus to legislative action so powerful, as the sight of a glittering epaulette, the roll of the drum, the shrill music of the “ear-piercing fife,” and the smell of human blood—nothing which so quickly prompts them to bestow all the means of scientific instruction to cause analyses and surveys to be made and mapped, to give instruction, life-commissions, large salaries, the choice of the public lands, and liberal pensions to wives and children. Eighty per cent. of the public burdens, willingly borne—nay, self-imposed—by this besotted nation, and that in time of peace, is for *warlike purposes*, and no public man can be found to move in the way of investigation or reform of such a prostitution of all the purposes of rational and enlightened Government.

But to return to the mode of feeding cattle in England and the food used there, with which our corn-meal would have to come in competition. At a late meeting of one of their *Agricultural Societies*, their system of *box feeding*, which is highly spoken of, and fast getting into use, was thus described:

At a recent meeting of the Cornwall Agricultural Association, at Truro, Mr. Karkeek, of Truro, gave the following useful information. He stated that that Mr. Trethewy, Mr. Treawna and himself went out to Mr. Davey's farm for the purpose of seeing the method of feeding cattle lately introduced there. The farm was taken in by the Messrs. Davey but a few years since, from the common at Tywarnhayle. The plan consists in feeding cattle in loose-boxes, on a compound of linseed and rye-meal, prepared as follows: 23 lbs. of crushed linseed is gradually mixed with 21 gallons of boiling water in a copper; after which, 84 lbs. of rye-meal and a handful of salt are added. The mixture, having been well stirred, is cast into moulds, forming cakes of 7 lbs. each. The quantities of ingredients above mentioned will make thirty-six cakes, and the whole can be manufactured by a man and two girls in



about one hour. One of these cakes, with  $\frac{3}{4}$  cwt. of Swede turnips, and a bushel of straw and hay chaff (which last is also mixed with linseed mucilage), is given to an ox in six meals per day. The method of preparing the linseed and chaff is by dissolving 12 lbs. of bruised linseed in 240 lbs. of boiling water; this is poured on straw, chaff, and hay, equal to fifty bushels, in a shallow cistern; while one person gradually pours the boiling mucilage over the chaff, another person turns and beats it with a beater till the liquid be perfectly absorbed. The expense of feeding an ox in the manner here described is about one shilling per day. The consumption of the compound is gradually increased in quantity. Some feeders give from 14 to 21 lbs. per day, being nearly in the same quantities that linseed-cake is given. The advantages derived from the use of the compound over the oil-cake are very considerable. The oil-cake costs, on an average, from £10 to £12 per ton, while the linseed compound can be manufactured with either pea, bean, barley, Indian corn, or rye meal, at from 60s. to 70s. per ton. Again, from the various trials which have been made by practical farmers, of the feeding qualities of the two articles, the advantages are in favor of the compound, weight for weight. The utensils required for manufacturing the compound are a 30 or 40-gallon copper, a hand-mill for crushing the linseed (cost 50s.), a half-hogshead or two, half a dozen moulds, a hand-cup, a three-pronged fork, and a wooden rammer, the whole of which may be purchased for 30s. Mr. Karkeek next described the Messrs. Davey's system of box-feeding. Their boxes are about nine feet square, sunk three feet (two feet it is said is quite sufficient) below the surface in one continuous excavation, and having sliding bars between the boxes, and a sliding trough placed in the boxes for holding food and water. The bars and troughs are made to slide upward, as the manure accumulates underneath. Messrs. Davey's cattle had been placed in the boxes and fed in this manner for six weeks, up to Saturday, Dec. 4; and there was scarcely the slightest effluvia arising from the dung. From the constant treading of the cattle, the dung becomes so consolidated that at the end of three months, when it is removed, it is generally cut with a hay-knife into solid cakes about two feet square. The Messrs. Davey having tried the system only six weeks, cannot speak of its practical value; but from reports of practical farmers of the highest respectability, there is reason to believe that cattle may be easily fattened in this manner in four months; besides which there is the advantage of making a rich and valuable manure. Mr. Karkeek went on to say that, having some doubts respecting this method of feeding, he wrote to Mr. James Daubuz, of Offington, near Worthing, who had pursued the system for some time. Mr. Daubuz's reply was: "I purchased eight Devon oxen at Barnet Fair, on the 11th of September, 1846, at a cost, including expenses, of £98. The cattle were examined by a Cornish friend of mine, who pronounced them to be a very indifferent lot; they were in very moderate condition. They had the run of the stubbles till the 11th November, when they were put into the boxes and fed on the linseed compound, manufactured from linseed, tail-barley, and tail-peas; commencing only with half a cake per day for each ox, and finishing with three cakes—averaging two cakes per day. They consumed, in this manner, up to the 15th of March,

Tail-barley, $7\frac{1}{2}$ qrs., at 24s.....	£9 0 0
Tail-peas, $7\frac{1}{2}$ qrs., at 36s.....	13 10 0
Linseed, 3 qrs., at 56s.....	8 8 0
Total.....	£30 18 0
Besides one bushel of steamed hay, half a cwt. of chaff, and one bushel of white carrots or Swedes each per day.....	10 2 0
Total.....	£41 0 0

They averaged on their sale £21 6s. 3 $\frac{1}{2}$ d., the total being £170 10s. 4d." Mr. Karkeek went on to observe that in using "compounds" of this kind, there was the additional advantage of being enabled to consume profitably on the farm a large quantity of offal corn which would otherwise be forced into the market, depreciating the value of good corn. Mr. Daubuz, for instance, fed the eight bullocks entirely on offal, barley and peas. In conclusion, Mr. Karkeek stated that Messrs. Davey had been growing their own flax on some of the land lately reclaimed by them from St. Agnes Common. The fields were four acres, and put into linseed and clover in April last. The crop of flax was a fair average, and that of clover was abundant. But, leaving growing of flax altogether out of the question (although there could be no doubt that it might be profitably cultivated, since it was found indigenous in the county,) there could not be a question of the importance of preparing a cheap material for the manufacture of beef and mutton, whether by cultivating linseed in this county, or by importing it, for the purpose of being formed into a compound with some of the farmer's home productions.

We learn, by a letter not written for publication, that a respectable and responsible gentleman in the West lately offered to an English firm at Cincinnati "to contract with them for 50,000 barrels of corn meal per year, delivered at New-Orleans at \$2 25 per barrel"—the meal to be equal in quality to a speci-

men which had been shown to us in this city, which had been dried by Stafford's Patent Dryer, and to be so dried and bolted. The partner in the firm to whom the offer was made doubted the possibility of complying with the contract, without a heavy loss on the part of the person making the offer, who says to us: "To convince him, I gave him the following data: 4 bushels of merchantable corn at 25 cents is \$1; barrel 30 cents; grinding and drying 10 cents; freight to New-Orleans 40 cents—say 50 cents—make \$1 90; if subjected to charges of shipment from New-Orleans (which may be avoided by laying the flat alongside of the ship,) ten cents per barrel would be added; 70 cents freight to Liverpool is above an average. Thus a superior article of corn meal may be laid down in Liverpool, London, or any other of the ports of Great Britain or Ireland, at \$2 70 per barrel. This is less than \$30 per gross ton, while the nutritious properties of Indian corn meal are nearly double that of oil-cake." This may be so, but it would have been more satisfactory to have been referred to the proofs by analysis, if to be had.

We have been informed that meal dried by Stafford's Patent Dryer, has sold at two shillings and sixpence more per barrel in Liverpool than any other meal in the market.

We doubt not that a contract might safely be made on the basis of twenty-five cents a bushel for the grain, but, in that case, what becomes of the Farmer, if the following calculation be true, which we take from the Iowa Advocate, as information of some interest to *emigrants from the old to the new States*:

PROFITS OF FARMING.—We solicit the attention of Iowa farmers to the following statements. They are from the pen of a practiced farmer, Mr. Douglas Oliver, of Wisconsin. It will be observed that the price of corn is put much higher than the market in Iowa will warrant:

<i>Profit on raising Corn at 25 cents per bushel.</i>	<i>Farmer's profit on raising Wheat at 50 cents per bushel.</i>
For plowing the ground at 75 cents per acre, say 20 acres.....\$15 00	For plowing ground at 75 cents per acre, say 20 acres.....\$15 00
For harrowing, one time, 18½ cents per acre.....3 75	For harrowing first time, 18½ cents per acre, 20 acres.....3 75
For furrowing it out to plant both ways, 33½ cents per acre.....6 66	For seed-wheat, 30 bushels, 50 cents per bushel.....15 00
For seed-corn, 3 bushels. \$1 per bushel. 3 00	For harrowing twice, and sowing, 37½ cents per acre.....7 50
For planting, 37½ cents per acre.....7 50	For harvesting and shocking, \$1 50 per acre.....30 00
For plowing, first time, 37½ cts. per acre 7 50	For hauling and stacking, 50 cts. pr acre 10 00
For hoeing, first time, \$1 per acre.....20 00	For threshing, say 18 bushels to the acre 12½ cents per bushel and storing away 45 00
For plowing three times more, 37½ cents 23 50	For hauling to market, 8½ cents pr bush. 30 00
For hoeing second time, \$1 per acre....20 00	For the rent of farm, one-third.....53 33
For husking and storing away, 4 cents per bushel.....40 00	Total.....\$209 58
For hauling to market, 5 cts. per bushel 50 00	Cr. by 360 bushels of wheat, 50 cents per bushel.....180 00
Rent of farm, one-third of crop, say.....83 33	Loss, when a farmer hires work done \$29 58
Cost of crop.....\$278 14	
Cr. by crop, 50 bushels per acre, 25 cents per bushel.....250 00	
Loss to farmer.....\$29 14	

BEES.—Mr. Robert Reid, baron officer of Hon. M. Stewart, Corsbie, Scotland, having two hives of bees, the one pretty strong and the other weak, took it into his head to make an experiment with the weakest, as it was not worth killing. He shut up the mouth of the "skep," covering it with straw, after covering the whole with earth in the same manner as a pit of potatoes. The strong hive, during winter, took for its sustenance upward of ten pounds of sugar. When dug up, wonderful to behold, the formerly weak hive was found in a strong and healthy state. The "skep" was lifted off the board, and there were not above a dozen dead bees in the lot; and it was truly pleasing to see them when aroused from their dormant state, flapping their wings and buzzing about, after being shut up from light and air four months and thirteen days. About two hours after being opened, they were out in swarms busily gathering wax.

## BOOK KNOWLEDGE IN FARMING.

WE have elsewhere expressed our belief that the habit of reading and reflecting on the principles of Agriculture is nowhere in our country more general than in the Middle and Southern and Atlantic States. In an Address conceived and couched in the finest tone of morals and philosophy, lately delivered at Columbia, S. C., before the State Agricultural Society, by R. F. W. ALLSTON, and published by order of the Society, he says

"But with regard to the use of books I must affirm that if, in this State, the present generation, and those preceding it for a century past, had been denied, in farming, the lights which have been derived from the Press, we should now be nearly a century behind the age in which we live, instead of occupying, as we do, a creditable place in rear of those who are foremost in Agricultural Science—in the use of labor-saving machinery—in the knowledge and use of the various powers by which necessary results may be produced in the best manner and the shortest time."

He recommends every farmer to take an agricultural paper, and adds, as to the

**LIFE AND CHARACTER OF THE AMERICAN FARMER**—"I feel bound to suggest that the practical Farmer, the successful and thriving Planter, generally reads too little—far too little—considering his leisure. Next to the contemplation of the infinite perfection of Deity, nothing tends more to enlarge and liberalize the mind of Man than intimate communion with the wise and good of his kind, either personally or by means of their writings. Few causes will serve so well to divert the anxious soul from the fretting cares and vexatious incidents of a busy life, as a familiar acquaintance with the virtuous traits of men of olden time, a relish for the history of by-gone days, or the occasional tracing of those developments in Nature, and of Science, which so admirably serve to demonstrate the moral progress of Man, to illustrate the power and excellence of his genius, and so materially to aid in consummating the great conquest of mind over matter.

"A taste for reading comes by teaching and example. If the mother of a family possess such a taste, (she may cultivate it without at all interfering with her domestic duties,) the daughter, in all probability, will imbibe it. Should the father happily be in the habit of occupying with books his leisure time, the son will seldom fail to be instructed, and ultimately to be led, by the example. Thus, in geometrical progression, how many sons, how many daughters, may not be trained by the joint precept and example of a considerate and virtuous couple, to an innocent and most useful habit—a habit which will prove a wholesome refuge in times of temptation and danger—an invaluable resource in seasons of trouble and disappointment, and in the dull evening of life.

"A plain elementary education at school will accomplish much that is necessary; it is the only kind likely to be universally diffused. In this view, how important becomes the successful administration of our system of Free Schools! a system which, however little good is effected by it, under present auspices, does infinite credit to the hearts of the wise statesmen by whom it was conceived and founded. Here the child of the most indigent may learn to read to his unlettered father a rule of practice in Farming or Mechanics, which may save him a world of doubt, perplexity and labor. And here another may be taught to minister to the care-worn, heart-stricken mother a solace for her untold griefs, to point to a home of refuge from her sorrows, by opening the Book of Life and tracing on its pages the unfailing promises of God."

**INDIA-RUBBER.**—It is well known that India-rubber has been substituted for steel springs in railcars and carriages. It is now found that railroad wheels, even for freight-cars, are greatly improved if cast double, so as to admit a layer of India-rubber between the two parts, one being within the other, which greatly lessens the heavy jarring occasioned by concussion on the rail.

**WHEY FOR COWS.**—The Herkimer dairymen give their whey to the cows, finding it more profitable than to feed it to their hogs. Most cows eat it greedily.



## AGRICULTURAL DINNER AT SIR ROBERT PEEL'S.

At the risk of being considered too prone to look abroad for information (and where would we not look for the best to be had?), we have decided to lay before our readers at least a good portion of what we find, in a late London Agricultural Gazette, of an *agricultural dinner party* given by Sir ROBERT PEEL.—By-the-by, we could not help wishing for the pleasure of partaking, though it were but as a silent partner, the intellectual festival, which must have been so enjoyable, at the late meeting of the Trustees of the Massachusetts Agricultural Society at *Marshfield*—for, without any wish or motive to flatter, we doubt if it would be easy to find, in any country, Mr. Webster's superior in clear conception of the true philosophy of any branch of Agriculture to which he may have at any time turned his attention—so truly *Baconian* is the cast of his mind.

While all that passed at Sir R. Peel's dinner, where conversation was strictly confined to agricultural topics, is worthy of attention, as being more or less applicable to our own country, the testimony as to the profitable effect of *draining* is quite remarkable; and, as the learned English Editor says, especially that feature of these operations which relates to the drainage of 100 acres of Drayton Meadows, on the banks of the River, on a dead level, and *subject to annual flooding, sometimes of two feet*. The whole of this, says Professor Lindley, has been drained 4 feet deep; and, although the flooding is not thus prevented, the consequences of the floods are converted from an injury into a benefit—for the moment the waters subside, the superfluous moisture passes off with great rapidity, all the matters suspended in the overflow being left in the ground, which acts as a filter. It is "like the inundation of the Nile." We presume that everything on the subject of draining must have interest for many readers, and especially for our numerous and valued friends in Louisiana. To us it appeared, on a very cursory view of their country and tillage, that to divest their soil more completely of its *surplus moisture* must be a great desideratum.

It needs, however, no argument to persuade the reader that any discussion must be entertaining and instructive, conducted by men as distinguished for their practical success and for their learning as the annals of modern Agriculture teach us those are who "gave in their experience" at the Dinner of Sir Robert Peel.—It was attended by "about 60 of the principal occupying tenants of the neighborhood." Truly is it said that the extent and number of the subjects, too, referred to on this remarkable occasion, and the detail in which most of them were discussed, confer great value on the report of what was said. What subjects more important than the *drainage of land*—its *preparation for wheat and other crops*—the *details of their cultivation*—the most profitable *modes of using farm produce in the feeding of animals*, and the *manufacture of manure*?—points constituting, in fact, the whole practice of ordinary farming—all of which are here referred to in the speeches of the practical men, and explained by the men of science.

To this account of the agricultural reünion at Sir Robert Peel's—himself one of the most wealthy and distinguished noblemen and farmers of the age—we

have pleasure in adding that the *Belgian* Government is giving evidence of its high appreciation of the policy of rewarding improvements in the great Art by which all others live, and move, and have their being. Alas! that we should be driven, for the most gratifying proofs of the auspicious change which these things all indicate, not so much to the chief magistrates and legislators of our own boastful Republic, as to the princes, potentates and noblemen of European monarchies! But, friends of the land, be of good cheer—better times are coming. At this moment (9th Nov.), watching eagerly for every good sign, we are anxious to see what was said at Charlottesville last week, by Hon. ANDREW STEVENSON, for in him, we know, the landed interest will ever find a swift witness in its behalf. The papers speak of his performance with sentiments of the highest gratification, and hopes of its good and lasting effects. "In the fullness of the heart the mouth speaketh,"—so it was with him.

And why, has it been well asked in reference to the measures so creditable to the Belgian Government, should not these honorable marks of distinction be bestowed upon those who have evinced talent and ability of a high order in the practice of that occupation, upon the *economical and skillful conduct of which a cheap and bountiful supply of the necessities of life depends?* But look at all our Executive Chambers, and Halls of Legislation, and Museums—do you find on their walls the portraits of any of the great benefactors of a Pursuit indissolubly connected, throughout the world, with the welfare if not the very existence of society, and the highest condition of which everywhere indicates the highest state of civilization? Have Societies, or Institutes, or public bodies, in Virginia, or New-York, or Massachusetts, caused the portraits to be exhibited, in their Halls, of John Taylor of Caroline, or Ruffin, or J. M. Garnett, or Judge Buel, or Mitchell, or Wadsworth, or Livingston, or Van Rensselaer, or John Lowell, or Elliot, or Pickering, or Deane, or Wilder, for their services to Agriculture and Horticulture? Alas! honors are most easily won from a perverted public sentiment, by distinction in any other line of art or industry than in that one which, beyond all comparison, is the most useful of all!

The Belgian Minister of the Interior has just addressed the following Circular to the Provincial Governors:

"The Agricultural Exhibition offers an occasion of which the Government is happy to avail itself, of granting special distinction to those cultivators whose eminent merit and useful works render them worthy of being recompensed by the State. I therefore request you, M. Governor, to second these benevolent intentions, and to point out to me those cultivators of your Province whose intelligent activity and honorable conduct appear to you worthy of being marked to the country, and of serving as an example of emulation to their fellow-citizens. I have no need to inform you that your information need not be confined to the great proprietors and the farmers who were able to proceed upon a large scale; you need not fear to go into the lowest ranks, where you will probably find men who are the most to be commended, because with very limited means they effected ameliorations which are profitable to all. I request you to be exceedingly careful in your investigation, and to send me the result by the 20th of this month, adding every detail which may put me in complete knowledge of the case.

(Signed)

"The Minister of the Interior,

ROGIER."

While we are noting these monarchical honors to the Plow, let us add that an AGRICULTURAL CONGRESS was lately held at Stockholm. It consisted of 420 members, and held twenty sittings, at all of which the *King was present*. On one of the days the members of the Congress all dined together, and the KING and QUEEN and PRINCE ROYAL took part at the banquet.

Since the above was in type, we have met with the following. On reading it we could not help thinking how the Member of Congress would be laughed out

of countenance, if one could be found, to move that a gold medal should be given (not to an officer for killing guerrillas), but to him in each State who should be reported by the State Agricultural Society as the best practical farmer in it! Yet ours is a popular Republican Government, and Agriculture the great employment and support of the country; but 80 per cent. of its expenses, borne by the land, has been, even in time of peace, on account of its military establishments. How long will farmers continue to stultify and impose upon themselves?

**AGRICULTURAL ORDER OF MERIT.**—The King of Prussia is about to create an Agricultural Order of Merit. The decoration of the new Order will bear on one side of it the effigy of the Royal founder, and on the other the name of the party receiving it, with the legend, "*Pour le mérite agricole.*" The Order is to be divided into three classes, and will be granted to cultivators who distinguish themselves in the exercise of their profession, as well as to all such as, by their inventions or writings on subjects applicable to it, serve the cause of Agriculture. This institution seems to be regarded with much favor on the Continent, since it cannot well fail to contribute much to the development of the agricultural capabilities of a country in which it is adopted.

But let us now join the party at Sir Robert Peel's:

**AGRICULTURAL MEETING AT DRAYTON MANOR.**

On Thursday, the 23d September, a party assembled at Drayton Manor, which included the following noblemen and gentlemen: The Earl Talbot, Lord Forester, Lord Hatherton, Sir Francis Lawley, Bart., Capt. Dilke of Maxtoke Castle, Mr. Edmund Peel, Sir Henry Delabecche, the Dean of Westminster (Dr. Buckland), Dr. Lindley, Dr. Lyon Playfair, Professor Wheatstone, Mr. Geo. Stephenson, Rev. Mr. Huxtable, Mr. F. Woodward of Comleiston, Mr. Mechi, and Mr. Josiah Parkes.

On the day following (Friday, Sept. 24), Sir Robert Peel invited to dinner about sixty of the principal occupying tenants residing in the neighborhood. Dinner was served about two o'clock in the noble Gallery of Portraits, recently completed at Drayton Manor, the whole party being assembled.

Having given, after dinner, the healths of the Queen and Prince Albert, Sir Robert Peel said he should propose only one other toast, the health of the Earl Talbot, Lord Lieutenant of the county. He should purposely abstain from all panegyrics on the private virtues of Lord Talbot, as he trusted the party assembled was about to occupy their time more usefully than in listening to an interchange of compliments and eulogiums. He was proud to see the party assembled under his roof. It comprised many proprietors of the soil distinguished for their zeal in the cause of agricultural improvement, and a large body of occupying tenants eminent for their skill, and respected for their integrity and high character. It comprised also men who had conferred on him by their presence on that day a great honor—men who had acquired their patent of nobility by the devotion of their lives to Science, and by making their talents and acquirements conducive to the great end of diffusing knowledge, and of practically improving the condition of their fellow creatures. There was not one of them who would not freely communicate whatever might be useful or interesting to those whom they met on that day. The cultivation of the soil would naturally be the chief topic of conversation, and he hoped that such men as Mr. Woodward, Mr. Mechi, and Mr. Huxtable (not in formal speeches, but in free and unreserved answers to the questions that might be put to them by the farmers present) would tell them by what means they had

*made barren and exhausted soils productive, and had derived profit from the application of capital and skill to the improvement of the soil.* Sir Robert Peel then proposed the health of Lord Talbot.

Lord Talbot, in acknowledging the compliment, observed that, although a farmer all his life, he was obliged to admit that he did not know how to grow crops till he this year went into Worcestershire, to visit his friend, Mr. F. Woodward; and, as that gentleman was present, he hoped that he would explain, for the information of the meeting, the principles on which he so conducted his farm as to be able to grow the splendid crops he had witnessed, for he thought that his wheat would this year average 50 bushels per acre.

Mr. WOODWARD said that although unaccustomed to public speaking, and feeling diffidence in addressing an audience consisting of some of the most intelligent and scientific men that England can boast of, he would endeavor to give the meeting the result of his practical experience of 20 years as an agriculturist. In his opinion, thorough-draining was the foundation of all good husbandry, *without which manures and skill are thrown away.* Some undrained land had come into his occupation—heavy land, which only produced 10½ bushels of wheat per acre; he immediately drained it 3 feet deep, subsoiled it, dressed it with burnt clay, and the first year obtained from it 51 bushels. He regarded the extensive burning of clay land as a most important practice. It rendered the soil so much more friable and convertible, and enabled the farmer to work it with much less horse labor.—*The effects of burnt clay upon all green crops were wonderful*—a most important fact, which could not be too strongly impressed upon the mind, as being very essential to the growth of corn, especially when consumed upon the land by sheep, eating at the same time a little oil-cake or refuse corn. He had not, however, found advantage in the use of Italian rye-grass, which he thought undeserving the praise it had received. The treading of sheep was highly advantageous to the Wheat crop, provided the land was thoroughly drained and subsoiled.—In order to secure the requisite amount of pressure, he had not only employed sheep but horses, or even men, who he found could tread down land for 1s. 6d. an acre. He had also found advantage, under some circumstances, in the use



of an instrument which he called a peg-roller. This was formed of an elm-wood cylinder, studded with oak pegs about four inches apart; it proved to be a most effectual implement when drawn over the land—imitating, as it did, the consolidating power exercised by the feet of a flock of sheep. He regarded pressing down the land as opposing an invincible obstacle to the operations of grubs and wire-worms. As to dead fallows, he entirely objected to them as wasteful and useless. On his clay land, when in turn for fallow, he planted vetches, and on his gravel, rye, and rye and vetches. For cleaning his stubbles after harvest, he employed the implement called a two-edged "skim," which he strongly recommended as a cheap and most valuable modern invention. Mr. Woodward then pointed out what he regarded as the best manner of breaking up inferior pastures and converting them into arable; and concluded a very instructive speech by forcibly pointing out the absolute necessity of *sending back to the land whatever is removed by a crop*, and by expressing his entire agreement in opinion with Mr. Woolwich Whitmore, Mr. Huxtable, and others, that *farming properly and efficiently carried out, with capital and skill*, may be made as profitable an investment as railways or other branches of commerce. Being asked whether he held his land on lease, Mr. Woodward replied that he did. But, even if he had not, he, nevertheless, was of opinion that the expense he incurred in the improvement of his land would have answered his purpose, for his improved wheat crop repaid those expenses immediately. Mr. Woodward having expressed a desire that Mr. Mechi would bring under the notice of the meeting the result of his high-farming in Essex.

Mr. MECHE responded to the call. His practice in Agriculture coincided so nearly with Mr. Woodward's, that it was only necessary to say that he grew alternately grain and root or leguminous crops, endeavoring as much as possible to grow wheat alternate years. He had originally drained his land 2 feet 8 inches deep, with pipes and stones, at a considerable expense; but since he had had the good fortune to meet with Mr. Parkes, he had amended his errors, and was draining more deeply and effectually with pipes alone, at one-third the cost. He rented some land adjoining his own; although he held but a seven years' lease, he drained it 5 feet deep with 1-inch pipes, at a cost of from 35s. to 50s. per acre [say \$8 to \$12]. *He could not afford to deprive himself of the benefit of drainage.* He found it very unprofitable to farm such land undrained. *The very first wheat crop remunerated him for the whole cost.* The result of his improvements at Tiptree had been to double the produce of his farm and of his labor. A portion of it was formerly a swamp, not producing 5s. [\$1 25] per acre. He had been entreated this year by a gardener in the neighborhood to let those 4 acres to him, at an annual rental of £5 [\$25] per acre. He had removed 3½ miles of unnecessary banks and fences. Taking the arable acreage of the United Kingdom, he thought they might safely dispense with 500,000 miles of unnecessary fencing, which, with its timber, displaced much food and labor. He considered the Agriculture of this country in a very backward and unsatisfactory state, compared with its Manufactures. The agricultural mechanical appliances were rude, costly, and unprofitable. The farm buildings generally were bad and uncentrically placed, causing a national loss of some millions—each ton of pro-

(830)

duce or manure costing an average carriage of 6d. per mile, renders the position of the building an important national consideration. *Wagons were a most unphilosophical contrivance.* It was quite clear that a long, light, low cart, on two wheels, having an area of capacity equal to a wagon, and only costing half as much, was a much more sensible and profitable mode of conveyance. The question was not now an open one, having been thoroughly discussed and decided upon at the London Farmers' Club; therefore the sooner the *wagons were got rid of the better.* With regard to the quantity of seed, his experiments (conducted now for three years, and publicly recorded) had uniformly been in favor of *thin sowing*—say from 4 to 5 pecks of wheat, and 6 to 7 pecks of barley and oats.—Some of the best farmers in his neighborhood adopted this system successfully. It was highly important, in a national point of view, that this question should be settled; for, if the quantities he had named were available, adieu at once to the necessity for foreign imports. It appeared to be admitted on all hands that, if a bushel of wheat vegetated, it was an ample seeding; and it was reasonable that it should be so, because if each good kernel produced only one ear containing 48 kernels (and that was not a large one), there was no allowance for increase by branching or tillering, which we knew would take place to a considerable extent in well-farmed land, containing an abundance of organic matter. Thin sowing delayed the ripening three or four days; consolidation by pressure prevented the development and action of wire-worm and slug. He had found *salt tended to a similar result.* He salted all his wheat at the rate of 4 to 8 bushels per acre, and *was determined to use much more.* He knew a gentleman in Northamptonshire whose wheat crops could scarcely ever be kept from going down until he used salt, which had effectually kept it standing. He (Mr. M.) salted the manure in his yards.—He found that it sweetened them (he supposed it fixed the ammonia). It was a singular fact that, while salt tended to preserve animal substances, it on the contrary rapidly decomposed vegetable matter. It was a cheap alkali of native production, costing only about 20s. to 30s. per ton, while all other alkalies were nearly eight times as dear. He strongly recommended the abundant use of bones, with and without acid, for root and green crops. It was evident that the bones formed in our growing animals and in our cows, from the produce of the farm, cost us 5d. [10 cents] per lb., or £45 [\$225] per ton. Now if we could replace these, as we can do, by bone-dust, at £7 [\$35] per ton, it was clearly good policy to use them. He considered the waste of the liquid portions of the manure in most farm-yards a *great national calamity.* *It was a great mistake ever to allow water to fall on manure.* Water was a very heavy article. A thousand gallons weighed 10,000 lbs., and was expensive to cart. He had heard farmers say, when rain was falling, that they should then litter their yards and make manure!—*Straw and water, in fact.* He found in practice that animals did well on their own excrements and straw under cover—that they consolidated the mass until it was 4 feet thick, when it would cut out like a good dung-heap, and be fit to carry on the land. But if rain-water were allowed to wash this mass, an injurious effect resulted both to the animal and to the manure. *He could not afford to allow his manure to be well washed in the yards by drainage from the*

buildings, and afterward to be washed, dried, and mangled by putting it out in heaps and turning over. It was a waste of time and of money. He found that his crops grew better with unwashed manure. *A farm-yard should be like a railway terminus*, covered in, but amply ventilated. There was comfort and profit in keeping everything dry. It did away with the necessity for water-carts and tanks—the liquid portions of the excrements being just sufficient to moisten the straw and burnt earth, or other absorbent material. He admired and practiced, to a certain extent, Mr. Huxtable's system of placing animals on boards. It would answer in a compact farm with good roads, and in cold climates, to feed sheep in the yards on roots. In mild climates, and dry, friable soils, it was most advantageous to consume the roots and green crops on the land by folding with sheep. There was no expense of carting off and carting back manure. Farmers had found out that the whole of the excrements were thus applied to the land, whereas in open yards with entroughed buildings much was washed out and wasted. He hoped to see the time when tenants would consider it to be their interest (as in parts of Scotland) to pay 10s. per acre more rent for properly farmed, permanent and convenient building, and drainage, in lieu of the miserable and misplaced dilapidations of the present time. It was, no doubt, partly this difference that caused the Scotch rents to appear higher than our own. He was a decided subsoiler to the depth of at least 2 feet. It was a cheap and effective way of getting rid of strong rooted weeds, their crowns being generally just below the ordinary depth of plowing. He did this in dry weather, and with the assistance of a heavy Crosskill roller and scarifier, made his fallows cheaply, quickly, and efficiently. He drilled his wheat at intervals of about 9 inches, so as to hoe them with Garrett's horse-hoe. It cost about 1s. per acre. It was far more expeditious and efficacious than the hand-hoe, and only cost one-fourth the amount. He strongly advocated the abundant use of oil-cake, and also of chalk, on heavy clays deficient in calcareous matter. It had been proved that much more produce had resulted from oil-cake folding than where an equivalent amount was expended in corn. Good high farming was by far the most profitable—the starvation principle was a losing game. If we borrowed from the earth we must repay, or we should soon find an empty exchequer.

Rev. A. HUXTABLE then rose and spoke to the following effect: I think this by far the most interesting agricultural meeting that I have ever attended, on account of the variety of important views and practices which have been brought under our notice. For my own part, at so late a period of the day, I must content myself with adducing a few facts that have come within my own farming experience, and defending one or two points of my farming practice which have been glanced at by the preceding speakers. As I see so many landed proprietors around me, I must beg permission to impress on them the duty of allowing their tenants to break up, under proper restrictions, the poorer lands now lying in grass. I think that I can show from my own experience that national wealth, the profits of the tenant, and the interests of the laborer, are deeply concerned in converting poor pasture into tillage. Thus, in my own parish, five years ago, there being many laborers out of employ, I obtained the consent of my landlord, Mr. Sturt, to break up the whole of the grass-lands of a

small dairy farm. It consisted of 95 acres, 10 of which only were then under the plow. When I entered on the occupation, the farm supported 14 dairy cows, and grew 48 bushels of wheat and 40 bushels of beans. Now it annually produces 1600 bushels of wheat, 40 head of cattle, cows, yearlings, and calves, and 100 sheep are fatted, and 80 pigs, and where 3½ laborers were employed, 12 are now sustained all the year round. But the farm, gentlemen, labors under one embarrassment,—such a one as I wish you all felt—such an accumulation of manure that, with the fear of laid wheat crops before my eyes, I know not where to place it. Allow me to detail briefly the steps by which this surely happy result has been brought about. I began at the beginning. I first drained the land; but of draining you have heard to-day so much that I will only say that, though it has been most successful, I yet heartily wish that I had earlier known Mr. Parkes's drainage. My fields would have been far more economically and effectually rid of their bottom water. I tried when this was done to improve the herbage of some of the better pastures, but neither liming, nor sheep-folding, nor guano, enabling me cut more than 15 cwt. of hay per acre; I pared and burnt it all, and cut down, by my kind landlord's leave, all the hedge-row timber, and grubbed up all save the boundary hedge, and have now a glorious farm. The next object was to provide for the permanent fertility of the soil by keeping a large amount of stock; for I hold that a farm ought to be made self-supporting as far as possible, and the purchase of manures should be regarded as only a temporary expedient, a necessary evil.—My first effort to consume the green crops grown on half my farm was very expensive, and therefore unsuccessful; for with regard to the beasts, I was forced to purchase a ruinous amount of straw, and the sheep eating off the Swedes on clay land in winter puddled the fields, and were themselves, amid good food, objects most pitiable. But when our principles are good, we must not allow slight difficulties to stop their application. I therefore determined to place my milch and store cattle on boards, as wood is an excellent non-conductor; and after a series of devices, I have succeeded in making them tolerably comfortable, so that I am now no longer dependent on my straw for the quantity of cattle which I keep. I am only limited in the number of animals which I keep by the amount of green food grown. In like manner, but with a variation of arrangement, the sheep were placed on small boards about 3½ inches wide, with an interval of about ½ inch between each, to permit the manure to fall freely into properly prepared tanks below. This is by far the most successful provision which I have made. Of 1,000 sheep so placed, I have never had one lame. The pigs in like manner, when fattened, sleep on a boarded stage above their feeding-place, and except in very cold weather require no straw for litter. Thus I have dispensed with a large expenditure of straw, which my cereals (half the farm) could not sufficiently provide. But I hear some one exclaim, "What do you make of your straw?" First of all, a good deal is required for bedding the horses, and the young stock which are in loose-boxes; and as they never tread the green fields, they require a great quantity of white bedding. Secondly, a great deal is wanted for food, being mixed with the green leaves of the root crop and the mashed turnips. Thirdly, a ton per acre is used in making clover and vetches into imperfectly dried hay, with a due admix-



ture of salt to arrest fermentation. These uses fully take up all the straw which I grow. I think the methods employed in preparing the manure from the "boarded" cattle deserve mention. First the liquid manure flows into large tanks; below them is another, which I call the mixing tank, for in it the manure is diluted with water to any degree which the state of the weather may require, the rule being that, in proportion to the increase of temperature must be the increase of dilution; *i. e.* the hotter the weather the weaker should be the manure applied. In order to avoid the expensive and often injurious water-cart, I have laid down over the highest part of my farm a main of green elm pipe, of 2 inches diameter, bored in the solid wood; at every 100 yards distance is an upright post, bored in the same manner, with a nozzle. A forcing-pump fixed at the mixing tank discharges along these pipes, buried 2 feet in the ground, the fluid with a pressure of 40 feet; of course it rushes up these pierced columns, and will discharge itself with great velocity through the nozzle; to this I attach first of all 40 yards of hose, and therewith water all the grass which it can reach. To the end of this hose another 40 yards of hose are attached, and a still larger portion of the surface is irrigated, and so on for as many 40 yards as are required. When enough has been irrigated at the first upright, the nozzle is plugged, and the fluid is discharged at the next 100 yards distanced column, and so on. For this application of the hose I am entirely indebted to that most able man, Mr. Edwin Chadwick: the green elm pipe is my own contrivance. The cost of the prepared canvas hose, which was obtained from Mr. Holland, of Manchester, was 1s. a yard—the wooden pipes cost me only 1s., and being under-ground they will be most enduring. By an outlay of £30 I can thus irrigate 40 acres of land; and see how inexpensive, compared with the use of the water-cart and horse, the application. A lad of 15 works the forcing-pump; the attaching the hose and its management require a man and a boy. With these, then, equivalent to two men, I can easily water two acres a day, at the rate of 40 hogsheads per acre of the best manure in the world: I say *best*, because all chemists will assure you that the liquid contains the principal nitrogenous and soluble salts, and therefore is far more valuable than the dung, and it is plain enough to every man, though he be no chemist, that plants can only take up the manure in a liquid form. The principal use which I make of the hose is to water the clover, and, above all, the noble, but this day much-decried, Italian rye-grass. How hard Mr. Woodward was upon its soft sweet herbage! Yet his own excellent principle, that you must carry back to the land an equivalent for what is taken away, may be successfully alleged in defence of this most productive and nutritious of all grasses. It is certainly true that if you cut and carry away Italian rye-grass, and do not also carry back the manure made in eating it, you will not be able to grow wheat after it. But from my own observation I know that if after each cutting the hose immediately follows, you may cut it without wrong to the land as often as you like, and an amount of fodder will be obtained which no other plant can approach. It comes the earliest, and grows the longest of all the grasses; and I feel confident that, with such appliances as I have mentioned, you may secure fifty tons per annum of this milk-giving, fat-producing, muscle-making grass. I can refer to Mr. Dickinson, of Curzon-street, as an authority for grow-

(832)

ing at least this weight of green food, and I believe far more. That you can cut it, by the help of liquid manure, six times a year, admits of no doubt. With regard to the manure made by sheep, as previously described, you will readily perceive its value if you reflect that when you give a flock in their house 20 tons of Swedes and their tops, you have minus only the increase of their bone and wool made during the three months of their happy confinement, all the inorganic and most of the organic ingredients of the crop being under the boards; in fact you may say that on the boards you have a fatted flock, and below the boards yet 20 tons of Swedes and their tops. I think that a good deal of misapprehension prevails respecting this mode of shed-feeding sheep, for you hear frequent comparison made on the superior system of feeding off crops in the fields. I have no doubt that in the summer months even fattening sheep will "do well" out of doors, and at the same time fertilize and consolidate the land; but I speak of feeding off winter crops by sheep which you wish to fat: and here I cannot think that the two systems admit of comparison, so superior are the results of the house and board system. But the conditions under which an animal is to be reared are quite different from those which you would observe in laying on fat. In the one case, exercise is absolutely necessary; in the other case, the quieter and more still the creature is kept the better. Briefly, then, my own practice, which science surely justifies, is this: the greater proportion, about two-thirds of my best roots are carted to the sheds, and given to the animals preparing for the butcher; whereas the tops and the smaller turnips are fed off by my breeding flock on the land, assisted by oil-cake and corn when necessary, and thus the land is rendered firm, and the ewes are kept in healthful exercise. Lastly, I must advert to the treatment of the dung made by the cattle and pigs. That on the boards is hourly swept down, and wheeled away to a long covered shed; contiguous to this is another shed containing a large store of burnt earth and other ashes. The dung is worked up with the ashes, and therewith are mixed the other manures, dissolved bones, soot, powdered chalk, &c. This, about 8 or 10 cart-loads per acre, is carted to the field ready for turnip sowing. The manure is drilled in by one of those that deliver moist manure, and thus 8 acres can be got over in a day drilled on the flat. If the field is very poor the drill goes over 4 acres in the morning without seed; in the afternoon the same quantity is again deposited in the same ruts, and the seed upon this double discharge. The advantage of this is, that the dung is never exposed to the drying of the sun or air; that the seed being deposited over a moist bed, germinates immediately in the driest season, and cares not for the fly, though for the prevalent grub it is certainly no remedy. The pig manure I consider the best of all; because one-half of the corn I feed them on is in the shape of beans, which contains the best mineral ingredient for growing Swedes, as I have endeavored to set forth in my "Lecture on Manures." These, gentlemen, then, are the principal points of the practice which have brought me into that pleasing embarrassment of which I spoke before, and which I wish may befall you all—more manure than you can safely put on your arable land.

Dr. PLAYFAIR remarked that so much had already been said about produce that he wished more particularly to draw attention to the fact that a great variation existed in the nature and



qualities of that produce when obtained. There were two purposes to be accomplished by all food, one of them being the increase and repair of the bodies of our animals—the other the support of animal heat. The body was an engine destined to perform particular work, and required various materials to keep it in constant action. Coal, which did admirably to generate steam, would be a most inadequate substance to repair the pistons and cranks of the steam-engine when it became damaged by use. So was it in the animal body, for that which built up its fabric was not suited to sustain its warmth, without which the exercise of its functions must cease. Food contained these substances in different proportions, some varieties of produce being well suited for fuel, while others were for true nutrition. Thus the potato formed a cheap and excellent fuel for the body, but was most expensive and inefficient as a means of repairing its damaged parts, while beans answered well the latter purpose, and were comparatively valueless for the former. The manner of manuring crops depended upon which of the two classes they belonged to; the flesh-forming principles were always associated with phosphorus and sulphur, which must be supplied with bone-earth, and sulphates, while the warmth-giving foods principally depend for their growth on a free supply of alkalis. Besides this, as farmers are the cultivators of food for the nation, it was important for them to know, especially in times of scarcity, such as we have had, with what crops they could grow the largest amount of food on the same space. In this respect the produce is most variable. Thus, while turnips, mangel-wurzel, &c., will grow nearly 700 lbs. of flesh-forming principles per acre, beans 600, and Italian rye-grass considerably more, you cannot obtain, in ordinary crops, more than 350 lbs. of potatoes and peas and barley, not more than 200 lbs. from a fair crop of wheat or hay, or 150 lbs. from an average crop of oats. The variation of produce is, therefore, very considerable. But as profit is naturally and most properly the great object of the farmer, it was equally important to know at what remunerative cost the public became supplied with the equivalent amount of various kinds of food. At London prices, a man can lay a pound of flesh on his body, with milk at 3s.; with turnips at 2s. 6d.; with potatoes, carrots, and butcher's meat, free from bone and fat, at 2s.; with oatmeal at 1s. 10d.; with bread, flour, and barley-meal at 1s. 2d.; and with beans and peas at less than 6d. These considerations are far from trivial, because when we consider that an equal amount of nutritious matter can be obtained from one food at less than one-fourth the cost of another, this is only saying that in times of distress, with an intelligent application of money, we can feed four people where formerly we could only feed one. True it is that in this country the art of cookery is far behind that of our Continental neighbors, and that we have not acquired the important art of rendering cheap varieties of food palatable. Count Rumford, when administering the affairs of Bavaria, and in introducing his important ameliorations into the habits of the poor, used to say that the internal resources of a country for food were as much dependent upon its cooks as upon its farmers, and in this he was perhaps not very far wrong. He meant by so saying to imply that a skillful adjustment of food and its skillful treatment might so render the cheapest food palatable that you could adequately sustain a larger popula-

tion upon a limited area by attention to the produce cultivated. It is only lately that philosophers have attended to the art of cookery, and most important results have already been obtained. It is now known that the flavoring principles are dissolved in the juices, so much so, indeed, that if you macerate the flesh of a fox in the expressed juice of venison, and afterward cook it, the former cannot be distinguished in flavor from the latter, or the flesh of a fowl may be made to taste like that of a pike by such maceration. In our ordinary way of cooking, however, a large portion of the flavoring substance is dissolved in the water, and is thrown away, unless it be, as is most proper, converted into soups. But far greater results follow from our ignorance of cooking. There is a substance called phosphate of soda contained in food, and it is by this salt that respiration is supported; without it we should die by asphyxia, as no means exist except this for carrying off carbonic acid from the system. This salt being soluble is very generally carried off from food during cooking, and the most distressing physiological results follow from the neglect. In salting meat, such phosphates are abundantly carried off with the brine, and scurvy naturally follows from the consequent want of adjustment between the organic and mineral portions of the food. Liebig, and others, have opened the way to study these important considerations in cookery, and he (Dr. Playfair) hoped to have an opportunity at some future time of explaining this subject more in detail to farmers. He now directed their attention to it, with the especial object of improving their cottage cookery, and the comfort of the workmen under their charge. If we could improve the cottage cookery of this country, if we could render palatable a greater variety of viands, the most important ends would be obtained. Wants would be created, and labor given for their gratification. A greater variety of produce would be cultivated in this country, labor would be better distributed and equalized, and the country would be freed from those dreaded visitations of famine which now unhappily arise from the failure of one of our few kinds of food.

Mr. PARKES said that he could mention a fact or two connected with the use of salt, which might be interesting to the farmers present, and, although not a farmer himself, he had, perhaps, more opportunities, from his extensive operations in drainage, of observing and learning the practice of farmers than the generality of agriculturists. It had been the habit for many years of those well-known and excellent farmers, the Messrs. Outhwaite, of Bainessee, near Catterick, in Yorkshire, to apply a very large quantity of salt as a dressing to the soil in preparing for wheat, *he believed more than a ton per acre*, but he did not recollect the exact weight or measure. They found it expedient on their soil to work the land well during the autumn and winter, and sow spring wheat. They were of opinion that the salt tended directly to the destruction of grubs, &c., and indirectly to the improvement of the plant itself. The land was well drained. The account of Messrs. Outhwaite's mode of farming was to be found in the Reports of the Yorkshire Agricultural Society, which body had not unfrequently conferred on these gentlemen their prize for the best farmed land within their district. An instance of the presence of enormous quantities of salt in land not accompanied by infertility might perhaps tend to disabuse the farmer's mind of a prevailing

idea that salt was applied even moderately and with judgment. He had observed in the autumn of 1845 a wheat crop on some land warped from the Humber at Patrington, in Yorkshire, the soil of which was quite white on the surface with crystalized salt, the result of powerful evaporation. The crop might average perhaps from 20 to 24 bushels per acre. This was the first crop of wheat taken off the reclaimed land after rape allowed to seed, which is used in these salt crop districts as the precursor of wheat, and is considered to take more salt out of the soil, and to fit it more quickly for wheat than any other plant. These crops of rape are frequently prodigious; salt, therefore, in such excess as actually to lie crystalized on the surface, is not injurious to rape, and may possibly be very advantageously applied as a hand tillage for rape in soils which do not contain it. On first draining these warp lands from 4 to 5 feet deep, the water, after rain, issues so strong of salt as nearly to float an egg, and for years afterward the water of drainage tastes brackish. That crops of all kinds—of wheat particularly—are vastly increased by draining, he had occasion to know from the effects produced on Mr. W. Marshall's estate at Enholmes, Patrington; but on the undrained lands, and therefore on soils not deprived of their salt by drainage, 5 quarters of wheat per acre, without the application of any manure, were a very common produce on this remarkable soil. The common earth-worm established itself in great numbers after drainage, but he had never observed any grubs or wire-worms in those soils.

Sir R. PEEL having proposed the health of the Dean of Westminster—

Dr. BUCKLAND, in returning thanks, addressed the company to the following effect: At this late hour I will trespass upon your time—which has been so long and so profitably occupied in hearing the results of the application of scientific principles to practical Agriculture—no farther than to express my conviction of the soundness of the principles which have been set forth by the three practical agriculturists who have laid before us the results of their scientific management of lands which, under ordinary treatment, were sterile, but in their hands have been rapidly rendered prolific in an unusual degree. It would be waste of time to enter into proofs of what is now universally acknowledged, and has been exemplified by the great improvements immediately resulting from drainage in the farms cultivated by Mr. Woodward, Mr. Mechi and Mr. Huxtable, viz., that drainage is the foundation and first condition indispensable to the profitable cultivation of all lands that are naturally wet; for on such lands, without drainage, all applications of manure or attempts at improvement of any kind are vain. But the land once drained is in fit condition to become the subject of any and all the profitable experiments we have with so much pleasure and profit heard described by the individuals who have made them. The best test of the truth of theories founded on the inductions of Science, is an appeal to practical results, such as have been detailed to us; it has been my good fortune to inspect on two occasions the farm and farm-yard management of Mr. Huxtable, and thereby to be able to bear testimony to the reality of the results he has enumerated in no exaggerated terms. The great point he has established in practice, and which all the experiments of scientific men have indicated to be the basis of practical Agriculture, is this, that *as it is the*

(834)

*object of the cultivator to obtain from the earth those vegetable and animal productions which contain the elements of the food of Man, so it is the object of the scientific farmer to apply to the earth, in the form of manure, the elements of the food of plants, in such kind and in such proportions as chemical analysis shows each kind of plant and each kind of grain respectively to require; and I believe that no living man has carried the combination of science with practice, as to these points, farther, or with more perfect success, than Mr. Huxtable.* Dr. Lyon Playfair has stated valuable results of chemical analysis, indicating the proportions of various kinds of nourishment in the seeds of plants we use for food; and has told us that scientific cookery has become the most recent addition to the subjects of the laboratory; and that while the farmer ought rather to study to supply flesh to the cook, than tallow to the chandler, the cook must also learn from the chemist the most efficient and most economical prescriptions for the preparation of that best result of agricultural experiments, viz., nutritious and wholesome and savory food for Man.

The health of Sir Robert Peel having been proposed by Lord TALBOT, drank with enthusiasm, and acknowledged in a brief but admirable speech, expressive of the strong interest taken by the Right Hon. Baronet in advancing the Agriculture of his country and promoting the welfare of the Farmer, notwithstanding what had been said to the contrary, the meeting separated, leaving a conviction on the minds of those who were present that it was one of the most interesting and important that has ever been held in England.

INCOMBUSTIBLE WASH.—Slake some stone-lime in a large tub or barrel, with boiling water, cover the same up to keep in all the steam. When thus slaked, pass six quarts of it through a fine sieve. It will be then in a state of fine flour. Now to six quarts of this lime add a quart of salt and one gallon of water; then boil the mixture, and skim it clean. To every five gallons of this mixture add one pound of alum, half a pound of copperas, by slow degrees, three-quarters of a pound of potash, and four quarts of fine sand or hard-wood ashes, sifted. This mixture will admit of any coloring matter you please, and may be applied with a brush. It looks better than paint, and is as durable as slate. It will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling upon it. When laid upon brick-work, it renders the bricks impervious to rain or wet.

MALAGA RAISINS.—These are all made by merely drying the large white Muscadelle grape without the addition of any ingredient. They are all raised within two leagues of the Southern Spanish coast, and do not succeed farther inland. The Lexica raisins, used for puddings, are, however, produced in the interior. They are gathered when ripe, and spread out upon the ground to dry, which usually requires 15 days, during which time they are never removed, although the drying process is retarded by the dews, which difficulty would doubtless be removed by the use of portable awnings.

## GRAPES AND WINE.

## THE CULTURE OF GRAPES AND MANUFACTURE OF DOMESTIC WINE IN OHIO.

BY H. LONGWORTH, CINCINNATI.

[From Communications made to the American Institute, in relation to Agriculture and its Products.]

I HAVE selected for the cultivation of the grape for wine, hills on the Ohio River, or within a few miles of the river, planting the vines on the tops and the sides of the hills, without particular regard to the exposure. The tops and sides of our steepest hills are rich, and little or no stone near the surface. The north sides of our hills are the richest, and as our seasons are long and warm, I consider the north sides equally favorable to the cultivation of the grape as the other points of the compass. Where the sides of the hills are so steep as to occasion washing of the soil, I trench the ground from 18 inches to 2 feet deep, and lay it off in benches, usually sodding the benches, but where, in trenching, stones are thrown up I give them the preference. The cost of benching is about \$50 per acre, done in the best manner. The depth to which I trench depends on the depth of the soil. The substratum is usually clay, and I trench deep enough to bring from 4 to 6 inches of the poor soil on the surface, wishing to keep the roots that far below the surface. When I first commenced my vineyards, to meet the views of my tenants, who must do it as they were accustomed to do it in Germany, the ground was trenched 3 feet deep, even where the good soil was less than a foot in depth, and the stiff clay thrown on the top. The consequence was the vines did not flourish, for the roots are generally inclined to keep near the surface, and never reached to the good soil, 2 feet below the surface. Where the ground is not so steep as to wash, deep plowing is all I deem necessary.

On the benches on the side hills, I usually place the rows from 4 to 4½ feet apart. I leave a distance of 3½ or 4 feet between the plants, and tie them to the stakes, generally of locust, from 5 to 6 feet high. On the benches we never use the plow. On level ground I should plant the rows 5 or 6 feet apart, and leave 4½ feet between the plants. Our soil in general requires little or no manure. We use occasionally all kinds of manure, but always have it well rotted before we apply it.

In planting cuttings, I plant two in each hill, placing them within 2 or 3 inches of each other at the top, and widely separated at the bottom, to enable me to remove one of them without disturbing the roots of the

other, should both grow. If the growth has not been sufficient to produce well-ripened wood, I cover it with earth the first winter. Early in the spring I head down the plant to two or three eyes, as soon as I discover which is the strongest shoot, break the others off, and permit one only to grow. I break off three or four of the first lateral branches, and after that give the plants no attention till the spring following, when I again head them down to four eyes, and permit two of the strongest to grow, taking off the lateral branches to such point as I expect to prune to the next spring. The spring following, (the third year,) I expect a small crop of fruit, and prune the strongest branch from 2 to 4 feet long, according to the growth of the plant, for bearing, and prune the other shoot, leaving five eyes, three of the strongest of which I allow to grow, breaking off lateral shoots as usual, and the following spring cut out the bearing wood of the preceding season, always pursuing the cane pruning, and leaving none of the two-year-old wood; and thereby always have all my shoots within a foot or 18 inches of the ground. In breaking off the lateral shoots, it must not be done till the wood begins to ripen; for if done too soon, it forces out the fruit buds of the next season, which brings a crop that is usually killed by the frost of the next fall, before fully ripe. I have frequently had the tops of my vines broken off by a heavy wind, and numerous fruit buds of the next season forced out; and when the fall was favorable, which is often the case on the Ohio, had a fine show of grapes fully ripe the last of October.

As a matter of curiosity, I have on the same vine had fruit not only of the current year, but from the buds of four succeeding years. Say in May, 1847, as soon as the plant is in blossom, I cut off the extremity of the shoot, and force out the fruit bud, designed for fruit in 1848. As soon as the fruit bud of 1848 is in blossom, I again cut off its extremity and force out the bud designed for fruit in 1849, and so continue to clip the extremities, till the growing season is over. In a grape-house properly heated, the fruit of the different years may all be brought to maturity. My Germans are averse to pruning till spring, as such was the practice in Germany. This often interferes with spring work. I would recommend pruning in the



fall, as soon as the leaves have fallen, and at the same time plant out cuttings. Where planted in the fall, I should plant so as to leave the upper bud even with the surface, and throw a little soil over it, and remove in the spring, as soon as the severe frost is over.

We gather our grapes as soon as they are fully ripe. In many parts of Europe they are suffered to hang on the vines till past maturity. This adds to the saccharine principle, but I find it injurious to the aroma and flavor of the wine. I cultivate none but red or black grapes. If red wine be the object, we mash the grapes, and have a partial fermentation before pressing, to bring out the coloring matter, which is contained in the skin. If a light colored wine be the object, we mash the grapes, and press them out as soon as gathered. We carefully pick from the bunches all rotten and green fruit. As soon as the must is in the cask I move it to the wine-room, which is sometimes in the cellar, and at other times above ground. In neither case has it ever run into the acetous fermentation.

We formerly added sugar to all our must before fermentation—to the Schuylkill Muscadell, from 12 to 16 oz.; to the Catawba, from 6 to 10 oz. to the gallon—being governed by the quantity of saccharine matter in the must, and also the quantity of leaven. Of late years, if the grapes are ripe, we use no sugar to the Catawba grape, and never add spirit in making wine from other grapes. Of the character of Madeira or Port, we generally use sugar before fermentation, and add from five to eight per cent. of brandy after the fermentation is over, to make it resemble those wines to which brandy is always added. The Isabella makes a very indifferent wine, unless 24 to 32 oz. of sugar is added to the gallon of must, according to the maturity of the fruit, when it makes a superior sweet wine, equal to the best imported.

The Reports of some of our Horticultural Societies, and publications of some of our vine-dressers, speak of 500 gallons of wine to the acre as an average yield. There is more of poetry than truth in these statements. After 30 years of cultivation, I deem 200 gallons to the acre a full average crop. The most I have known grown on two acres was 1,300 gallons from the Catawba grape. This I consider our most valuable grape for wine, and manufactured with care and left till of proper age, will rival the best dry Hock. After two years' trial, I am satisfied it will also make a superior sparkling Champagne, and am now erecting a vault and building to have it manufactured extensively. From the Isabella grape I one year made from 1-14 of an acre 105 gallons, being at the rate of 1,470 gallons to the acre. This grape ripens unequally with us, and is very subject to the rot. The Missouri bids fair to be valuable as a wine grape; and the Herbemont would be very valuable both for the table and wine if it were less subject to rot. I have tried the foreign grapes extensively for wine at great

expense for many years, and have abandoned them as unfit for our climate. In the acclimation of plants I do not believe. The white Sweetwater grape is not more hardy with me than it was thirty years since, and does not bear as well. I have tried them in all soils, and with all exposures.

I obtained 5,000 plants from Madeira, 10,000 from France; and one-half of them, consisting of twenty varieties of the most celebrated wine grapes from the mountains of Jura, in the extreme northern part of France, where the vine region ends; I also obtained them from the vicinity of Paris, Bordeaux, and from Germany. I went to the expense of trenching 100 feet square on a side hill, placing a layer of stone and gravel at the bottom, with a drain to carry off the water, and put in a compost of rich soil and sand three feet deep, and planted on it a great variety of foreign wine grapes. All failed; and not a single plant is left in my vineyards. I would advise the cultivation of native grapes alone, and the raising of new varieties from their seed. It may be advisable to cross the Catawba with some of the best foreign wine grapes, and raise from the seed.

I have 24 vineyards, and about 67 acres of vineyard in bearing, and about 32 acres recently planted, or ready for planting in the spring. Last year there was a partial failure of the crop, but we made 300 barrels of wine, being 200 barrels less than we calculated on making before the rot commenced in the grapes. Of the cost and profit of cultivation, I am not fully competent to speak; for profit has not been my object, nor have I devoted that attention to my tenants that a regard for profit would require. I commenced with the firm belief that the climate and soil in this region were admirably calculated for the cultivation of the grape and manufacture of wine, and though I had little hope of succeeding in the cultivation of foreign wine grapes, I determined to give them a fair trial, and resolved to collect native grapes from different parts of America, believing, as the Hughes crab-apple of Virginia gave us better cider than any foreign apple, I might find a native grape capable of making a superior wine.

About twenty-five years since, I commenced settling Germans on my hilly ground, and setting off to each from 12 to 25 acres. They were generally very poor. There were no written contracts, but the understanding was, I was to furnish all grape-cuttings and fruit-trees wanted; I paid for trenching and benching portions of the ground, and gave them such aid as was necessary at the outset. I was to have half the wine at the press, and half the amount of sales of the other fruit. All other articles raised on the place were for their own benefit. The grapes were generally neglected, as it took some years to bring them into bearing, while the potatoes and sour-croût yielded an immediate income. My first tenant, instead of having a crop of grapes the third or fourth year, had

his crop the ninth year, when his share yielded him \$200. The tenth year his wine yielded him about \$300. So large a sum, and all in silver, bewildered the old man's imagination. He made me his best bow, went into the interior, bought land, and began a vineyard on his own account. His latitude was too far north for the grape, and after six years' absence the old man returned nearly penniless, and began a new vineyard on 4 acres of ground, adjoining the old one, then and now under charge of one of his sons-in-law. He will next season make some wine; but to cheer the old man's spirits, we have enabled him occasionally to take his accustomed glass of wine, and sing his old song under the shade of his favorite tree.

Most of my tenants have occupied their present vineyards from 10 to 25 years, and are contented and happy, if not rich. One of them who works harder than any of the others, and keeps his family at work, and devotes most of his time to his vineyard, made from his wine last year \$1,400. But I would not recommend the cultivation of the grape for profit to persons who hire all and work none.

Our wines have always met a ready sale in the city, and bring from \$1 to \$1 50 per gallon. The grape culture is now spreading rapidly, and we must look out for a market abroad. The price will depend on the manufacturer. In the wine countries of Europe it is a standing proverb that "a poor man cannot make good wine." The reason is obvious: he is compelled to sell his wine when new, and cannot devote the necessary attention, and wait till his wine is five or six years of age, before he sells it.

It is there also said that all depends on soil and exposure; and while the wine at one vineyard brings \$12 per dozen, the wine of an adjoining vineyard will not command one-quarter the sum. In this doctrine I place no reliance. With us, I find the quality chiefly depends on the care and attention of the manufacture. Wine requires much greater skill and care in the manufacture than is requisite in making cheese and butter. What more simple than the making of butter, yet one tenant on a farm will make butter of a superior quality, while the butter made by another tenant on the same farm, with equal facilities, is scarcely fit for use, and will not command half the price of his brother tenant. In Europe a landlord often commences with selling his wine at \$3 per dozen, and ends by selling it at \$12 or more, as his reputation becomes established. A manufacturer who values the reputation of his vineyard, in unfavorable seasons sells his wine in the cask, without attaching his name to it, at a low price.

The cultivation of the grape for wine in our country was attempted about fifty years since by a company at Spring Hill, near Philadelphia. They tried foreign wine grapes and found them unsuited to our climate. They found one grape only to stand the climate and bear well.

The idea of manufacturing wine from a native grape would in that day have been hooted at, and the manager wisely, if not honestly, called it the Cape grape, though taken from the banks of the Schuylkill—leaving it to be inferred that the wine was from the Cape of Good Hope. The next attempt was by the Swiss emigrants at Vevay, Indiana. They found the grape of Switzerland unsuited to our climate; and hearing of the Cape grape succeeding at Spring Hill procured it, and for many years cultivated it, making a hard, rough, red wine, excellent for sangaree, but not relished as a table wine.

Their vineyards have gone down, and the Cape grape (Schuylkill Muscadell) is now but little cultivated. It is one of our surest bearers, and pressed as soon as gathered, and manufactured after the manner of Madeira and Teneriffe wines, when at a proper age it greatly resembles them.

We are indebted to Major Adlam, of the District of Columbia, for the introduction of the Catawba, our best wine grape. He erred in making from it a sweet wine. The Major was compelled to cultivate it with a view to immediate profit, and injured the reputation of his wine, in seasons when the Catawba did not produce a full crop, by mixing with them the wild grapes of the woods in his vicinity. By the introduction of that grape he was a great benefactor to the nation, and the day is not distant when the banks of the Ohio will rival the banks of the Rhine, in the quality and quantity of the wine produced. Our German emigrants are the people who will accomplish it. Our hills suitable for wine are of little value for other cultivation. Give a German ten acres of this land, and if he has a wife and children he will live in great luxury. He will never want for his two greatest of all luxuries, wine and sour-crust. His children, however small, not only aid him in the cultivation, but his wife, during the summer and fall, does the greater part of the labor in the vineyard. The poor vine-dressers in Germany are seldom so rich as to own a horse, and therefore over-estimate their value. Yet greatly as they value the acquisition of a broken-down pony in this country, it does not lessen their estimation of the great value of their wives in the vineyards. A very honest Dutch tenant of mine, who was so unfortunate as to lose his wife, observed to me, "He might just as well have lost his horse."

**BEST TIME FOR KILLING ANIMALS.**—It has lately been discovered that the flesh of animals which are killed in the middle of the night will keep much longer than it will when they are killed in the day time; and it is for this reason preferred by those who prepare potted meats. This circumstance is very singular, for it proves that the flesh is fittest for keeping when taken from the animal at the time when the respiration is slowest and the temperature of the animal lowest. It is well known that the flesh of animals which have been hard driven will not keep at all. After what has been stated we need not be surprised, as this quickens the respiration and heightens the temperature. [Dumas's Chemie.]

## SALE OF CROPS ON THE GROUND IN SCOTLAND.

AMERICANS often wonder at the quantity and cost of manure and of labor applied to land in England and Scotland, and are at a loss to know how it is that lands should *rent* there for more than would buy the *fee simple* of what we call middling land in the United States.

The following authentic accounts of sales of standing or growing crops there, as reported in a late number of the "Mark-Lane Express," will go far to unravel the mystery and dispel doubt for those who have not inquired or reflected on the subject. The probability is that these Wheat crops averaged from 30 to 50 bushels to the acre, Oats 60 or 70, and Potatoes not less than 400.

Who can tell what may be done in our country when recourse has been had, in like manner, to the accumulation of great quantities of manure, to thorough-draining, and to perfect tillage—all according to the true *principles of Agriculture*, as ascertained by scientific investigation and practice, and as detailed from month to month in this "FARMERS' LIBRARY." [Let the reader allow \$5 for every £1 sterling.]

**SALE OF GROWING CROPS AT PERTH.**—On Thursday se'night there were sold, by public roup, at the Home Farm of Cadder, about seventy acres, imperial measure, of growing crop. The wheat was almost ready for the sickle, and some of the oats were partly cut down. We saw several very large potatoes, which were pulled up by some of the farmers present, who pronounced them free from disease. The turnips also were forward, and looked healthy. The following are the average prices of the sale: Potatoes, from £28 5s. to £37 10s. per imperial acre; S. turnips, from £10 10s. to £11 15s. ditto; Y. turnips, from £9 5s. to £11 ditto; oats, from £9 10s. to £10 12s. ditto; wheat, from £10 10s. to £11 14s. ditto. [Witness.

**SALE OF CROPS AT AYR.**—The sales of crop this year in our neighborhood have been well attended, and brought excellent prices. At Macnairston, wheat averaged £11 per Scotch acre, turnips £16; and at Friarland, beans from £10 to £12 15s. At Thornbrock, parish of Maybole, middling oats brought from £6 to £9; at Broadshewan, £5 to £7; at West Enoch, £6 to £8; and, at Mackailston, potatoes brought upward of £40. Hay, in general, has also sold well, especially meadow, which is sought after for winter fodder. The above quotations are from a few of the last of the numerous sales conducted by Mr. Mitchell, auctioneer, Maybole, this year.

[Ayr Advertiser.]

**SALE OF CROPS AT DUMFRIES.**—Last week we stated that oats had been sold at Comlongan Mains at £13 10s. per imperial acre.—We have been made aware of higher figures since, although only in two instances. At Mr. Williamson's sale, Main of Friars Carse, early Angus-shire oats sold at £13 17s., and potatoes at £12, making an average of twelve guineas [£60] over 17 acres. On Stapleton, on the 16th, Messrs. Farish and Brand, as agents, sold 114 acres of standing corn. The domain was necessarily divided into a number of lots, the highest of which actually realized £14 5s. [£61] the imperial, or pretty nearly £18 the Scotch, acre. Having examined a small sample of the grain, we consider it among, if not, the very finest that ever was shown in any market, [Dumfries Cour.

**THE FRUIT CROP ON THE RHINE.**—"In the memory of man," says a letter dated Wiesbaden, the 23d ult., "the crops were never so abundant as this year in our country. All the trees are overloaded with fruit, and we cannot procure a sufficient quantity of stakes to support the branches. The Government has ordered the Administration of the Forests to provide a supply for the farmers and horticulturists, and no less than 80,000 have been already demanded. Apples are particularly abundant. The English have purchased an enormous quantity of that fruit, which is to be embarked in steamers for London."

**RENOVATION OF MANUSCRIPTS.**—Take a hair pencil and wash the part which has been effaced with a solution of prussiate of potash in water, and the writing will again appear, if the paper has not been destroyed.



## DRAINING.

## THE PRINCIPLE OF ITS UTILITY EXPLAINED.

HAVE we dwelt or can we dwell too often on a point connected with agricultural improvement which, until lately, has not attracted the attention of the agricultural community—nor does it even now, if we may judge by what we see in the country, in anything like the degree that it deserves to do! Before we had read more than half the following article, we decided to preserve it in our journal, not for the sake of the growers of grapes—few and far between as they are—but for the very reasons that, in the close of it, we found avowed as those which had prompted the learned writer. Yes, we believe with him that 100 bushels of wheat will yet be raised on an acre, and that treble our present would have been our average crop if the sons of farmers were educated for the Plow, as carefully and thoroughly as the chosen few of the Government are now educated for the Sword, at the expense chiefly of the landed interest.

There are few gardeners now remaining who would think of growing vines in a wet border. To have it thoroughly drained is the first condition requisite for success; upon this all are agreed. But we are by no means sure that they always understand *why* thorough drainage is so essential. It is to be suspected that, in some minds at least, water is supposed to be the gardener's enemy—to be a substance quite unsuitable to plants, and of which it is the gardener's aim to get rid. Once, indeed, we overheard a "practical man" boasting of the dryness of his vine border, and telling a brother "practical" that nobody could squeeze a drop out of it. The same ingenious gentleman was found, four months afterward, besieging his acquaintances for advice how to keep down the red spider, which, as he alleged, his predecessor had allowed to get to such a head that it had almost killed the vines which he had planted in the new border that he had laid dry, with so much cleverness, in the previous spring. Luckily it is not easy to over-dry solid earth in England.

But, as we have repeatedly stated, it is the air that takes the place of water in well-drained soil, which proves so beneficial to plants; it is because air cannot reach the roots of plants, when a border is water-logged, that trees suffer. Roots require air as well as leaves, and no mistake can be greater than to suppose the contrary. It is evident that, if the crevices between the particles of soil in a garden are filled with water, air must be thence excluded; they cannot both be present, for the quantity of air dissolved in stagnant water is too inconsiderable to deserve attention. It may be enough for the maintenance of a rush or a horsetail, but not for a healthy garden plant, and least of all for a vine, whose air-vessels are perhaps the largest and most abundant of any European tree.

(839)

When a vine border is drained it is improved, not so much by the removal of water as by the admission of air. But the removal of superfluous water, and the free access of air, has the additional and very important effect of raising the temperature of soil. Air is a bad conductor of heat, water a good one: a border composed of porous materials not water-logged is an apparatus of non-conducting cavities, from which any heat that may be gained escapes with difficulty and slowly—once warmed it remains so, not for a few hours, but for weeks. Water, on the contrary, carries off heat with such rapidity that a water-logged border is always cold. Warm rain, falling on a water-logged soil, cannot sink into it, but remains near the surface, and speedily cools again; but warm rain falling on a thoroughly drained border sinks quickly through it, parts with its heat as it descends, and that heat is detained in the air cavities of the soil to be very gradually parted with again.

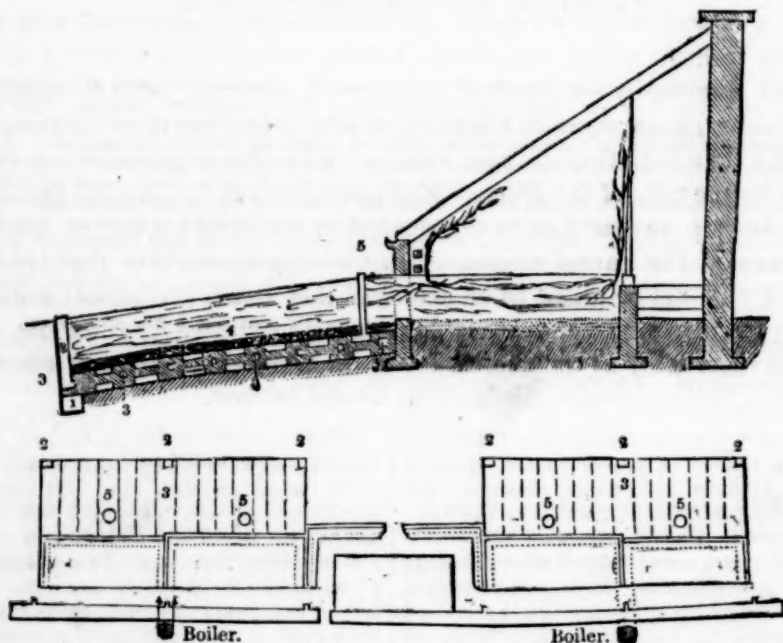
We may therefore say that a thoroughly drained border is advantageous to a vine, not because it has less water, but because it has more air and warmth.

It so happens that there exists a vine border constructed with reference to these principles—that is to say, well drained, well aired, and as well warmed as it can be by merely natural means. It is to be found at Castle Malgwyn, near Pembroke, the seat of A. L. Gower, Esq.; and is thus described in the new number of the "Journal of the Horticultural Society:"

"The bottom of the border is gently sloped from the houses to the extreme edge, where is built a box-drain extending the whole length of the border, as shown in the accompanying section marked 1; this drain is 1 foot square, the top of it being level with the bot-

tom of the border, as also shown in section. When this was completed, dwarf walls, marked 3, were built across the border,  $3\frac{1}{2}$  feet apart, 1 foot square, in the pigeon-hole manner; on the top of these walls are laid rough flags; these in reality form the bottom of the border, and upon these are placed about 6 inches of broken stones and bricks, marked 4, then covered with turf with the grassy side

down, to prevent the soil mixing with the stones. There are flues or chimneys at each end of the border and center, communicating with the drains in the bottom, as shown in section marked 2. The top of these flues is nicely made of stone 10 inches square, through which is cut a hole of 6 inches square, into which is inserted a plug of a wedge-like form, so as to fit tightly, but removable at



GROUND PLAN OF HOUSES, AND SHOWING CROSS-WALLS BENEATH THE VINE BORDERS.

pleasure; these flues are about an inch above ground. At the back of the border are placed cast-iron pipes (marked 5), perpendicularly, and also communicating with the drains underneath; those being higher than the flues in front cause a motion in the air beneath the border. After a long continuance of rain, the plugs in the flues in front are taken out, thereby creating a great circulation of air, and thus to a vast extent accelerating the proper drying of the borders, which is deemed of much importance. In the winter season, the borders are covered with leaves and stable manure to the depth of 12 inches."

It is obvious that the whole aim of the constructor of this border was to do that which the foregoing observations show to be so important. He not only gets rid of superfluous water, but he introduces air in abundance, and at the same time the natural warmth which it carries with it. In cold or unsuitable weather he stops off the excessive admission of air.

And what is the result of this system?—Black Hamburgh grapes, weighing from two

pounds nine ounces up to five pounds a bunch—beautiful fruit of admirable quality, on vines just seven years old.

But these principles have a higher application than the production of gigantic bunches of grapes. Had they no other value, they would be in our eyes of much less importance than we assign them. It is because they apply to all other crops as much as to the vine, that we would most earnestly call attention to them. Nor are they garden crops alone to which we refer. The farmer is more interested in the application of these principles than even the gardener, inasmuch as his stake in the land is so much higher; and he will discover, sooner or later, that it is just as possible to grow gigantic wheat crops as enormous grapes, if he will but study and learn how to apply the unvarying laws of Nature. If a bunch of grapes can be raised from 1 lb. to 5 lbs., there is nothing in the nature of things to oppose a wheat crop being raised from 20 bushels to 100; and it will probably be done. A most valuable school for farmers is the modern garden.

**LONGEVITY OF THE DONKEY.**—A donkey belonging to Mr. Gandey, of Brighton, died lately at the advanced age of a hundred years! It was a great favorite with its master, and was well provided for up to the time of death.

## LETTER XIV.

## ANATOMY AND DISEASES OF SHEEP.

Character of American ovine veterinary works—of the English... Anatomical details of the latter valuable—necessity of cutting clear from their systems of pathology and therapeutics—reasons... Exciting causes of disease even in adjacent localities in England not the same—popular superstitions on the subject... Necessarily greater differences as between remote countries possessing different climates, etc... Ravages of rot in Europe—scarcely known in most parts of America... Exciting causes apparently the same in both... Hoof-ail, though retained here by contagion, not primarily produced by the same causes as in England... Various European diseases not known here... Difference in the pathology of the same diseases in this country and in England... The English ones accompanied with more inflammatory action—the American of an asthenic or sinking character... Pathological differences require a corresponding difference in therapeutics... English system of therapeutics objectionable for the above reason—on account of its expensiveness—and, for popular purposes, by the extent of its pharmacopias... The proper ovine veterinary system to be adopted—manner of classifying diseases... Anatomy of the Sheep—how far to be studied—directions to be given... The Omentum... The Rumen... The Reticulum... The Maniplus... The Abomasum... The functions of the different Stomachs... The Duodenum... The Jejunum... The Ileum... The Cæcum... The Colon... The Rectum... The Mesentery... The process of digestion... The Spleen... The Pancreas... The Liver... The Kidneys... The Bladder... The Uterus and Vagina.

*Dear Sir:* Most of the veterinary works which have appeared in this country in relation to the Sheep, Horse, and other domestic animals, have been made up simply of medical recipes; or, if they have given systems of veterinary nosology and pathology, these systems have been mere transcripts of those of European, and particularly of English writers.

I have examined all, I believe, of the most celebrated late English authors, scientific and empirical,\* on the diseases of the Sheep and their cures. For anatomical and general pathological details, the works of some of the former possess great value, and compare favorably with the treatises on the same topics by the most eminent physicians and surgeons. This is particularly true of the work on Sheep by the late Mr. Youatt—the fountain-head from which most of the later English writers on the same subject have so liberally drawn, and will probably continue so to do for a century to come. For minute accuracy of description, particularly in the department of pathology—for elaborate research into both facts and authorities—for clearness and sparkling vivacity of style, this gentleman, it seems to me, is entirely without a competitor among the English veterinarians, and his works will bear reading alongside those of a Cooper, a Louis, and a Chapman.

I have hesitated whether to transcribe entire Mr. Youatt's treatise on the Anatomy of the Sheep. It would be the sheerest affectation—not to say plagiarism—to publish a mere abridgment of his remarks, or their substance dressed up in other words, as some late English writers have done, for the purpose of setting up pretensions to that originality which Mr. Youatt has left so little room for in this department. But as these Letters, Sir, are published for the benefit of the many, rather than to instruct those already versed to any considerable extent in Veterinary Science, I have been led to doubt whether any systematic treatise on Anatomy is necessary. On the whole, I have come to the conclusion that farther than to exhibit the

\* I do not use the word "empirical" here in its invidious sense. I mean to describe by it a class of writers versed in experiments merely, as contradistinguished from those who possess a scientific knowledge of physiology, pathology, therapeutics, &c.



localities of disease, explain certain operations in the animal economy, and render terms intelligible, it would be time thrown away.

In pathology somewhat, and to a much greater extent in the systems of therapeutics adopted, I have found it necessary to cut clear from all English ovine veterinarians. If this is regarded as presumptuous, I have only to say that the testimony or opinions of that man are worth little who so far pins his faith on another's views, as to disregard the plain evidence of his own senses. The salutary rule of the law is, each witness testifies to what *he* has *seen*, and to what, crediting the assertions of his own senses, *he knows*. It is for the investigating tribunal to decide what weight shall be attached to the testimony. That tribunal, in the present case, is the public.

But in reality, a discrepancy of views on the above subjects, does not *necessarily* imply an error on either side. The pathology of diseases frequently does not coincide, as between different climates and countries, and sometimes, singularly enough, between contiguous localities in the same country. This is especially true as regards the origin or exciting cause of disease. Where the atmospheric, alimentary, and all other *observable* conditions are nearly identical, occult causes which baffle the closest and most scientific scrutiny, not unfrequently either periodically or regularly, scourge man or beast with disease in one locality, while another one is almost uniformly exempt from these attacks. What English pathologist, for example, has ever assigned a physical cause which would answer, quantitatively, as a criterion to decide on the proportionable prevalence of the same malady in other regions—or the existence of which would even prove that the disease existed at all—for the frequent appearance of goitre (*bronchele*) among the inhabitants of Derbyshire, and the comparative exemption from it of the inhabitants of contiguous counties? \* The theatres of its especial visitation, in other parts of the world, seem to be equally determined by chance—though undoubtedly dependent upon physical causes which have as yet eluded observation.

It is not astonishing, therefore, that the ignorant down to our own times, and even the enlightened, until a period comparatively recent, should have sought the incomprehensible causes of many diseases, in the regions of the preternatural. Among brutes especially, which were supposed to be more given up to such influences, these phenomena were conveniently assigned, by our English and Scotch ancestors, to

——“some dev'lish cantrip slight”

of “warlocks and witches”—the malevolence of an offended fairy or spiteful gnome.†

\* I understand that the inhabitants of the adjoining counties of Stafford, Nottingham and Leicester are comparatively exempt from the attack of goitre.

† In Burns's inimitable Tam O'Shanter, some of the singular powers once exercised

——“by withered beldams auld and droll

\* \* \* \* \*

Lowping and flinging on a crummock”—

and sometimes, though far more rarely, by “ae winsome wench and wale,” to turn aside the established laws of Nature and God's providence, are thus enumerated in describing one of the diabolical sisterhood:

“Mony a beast to dead she shot,  
And perished mony a bonny boat,  
And shook baith meikle corn and bear,  
And kept the country-side in fear.”

No one will understand that the witch, in full league with the Devil, had any occasion for mortal firearms, in “shooting” the beasts of her victims. Murrain, and in some cases death, followed a glance of her “evil eye.” And even the witches of Burns are tame every-day bodies, compared with those which swell the infernal *dramatis persone* of Faust, or mingle in the gloomy horrors of Macbeth.

Two centuries ago, and even less, there was not a parish in England, a hill or dell in Scotland, or even a colonized nook in the wild woods of America, where witchcraft was not rife; and multitudes in every rank in life were consigned to the gallows, the faggot, strangling, &c., for this crime, by the highest judicial tri-

Equally unphilosophical, and not less mischievous in its effects on the progress of medical science, are those religious views, widely prevalent even at the present day, which in every epizootic as well as epidemic scourge, recognize only a direct Theocratic infliction, operating without the intervention of physical causes. If these doctrines do not, as when carried to their full extent among the Mussulmans—who yield a passive non-resistance to plague and conflagration as the direct expression of God's will—lead to an entire abandonment of remedial measures, they at least deter scrutiny into the inducing *natural causes*, and thus occasion a neglect of all *preventive*, and a much less perfect understanding of appropriate *remedial* action.

Between countries widely separated—where their climates and other circumstances exhibit considerable differences—it would naturally be expected that still greater discrepancies would appear in their local nosology. England and the United States are subject to several corresponding ovine diseases, yet it is notorious that some of the most destructive ones of the former are unknown, or next to unknown, in the latter. The rot, according to Mr. Youatt, destroys a million of sheep annually in the British Isl-

lands of England and Scotland—the former presided over by such men as Sir Matthew Hale! One approved method of detecting witches was to wrap the suspected persons in a sheet, the great toes and thumbs being tied together, and then dragging them through a pond or river. If they *sank* they were guiltless—if not, their fate is thus alluded to by Hudibras in his description of the monster Hopkins, the "Witch-finder General" of England:

"And has he not within a year  
Hanged threescore of them in one shire?  
Some only for not being drowned!"

That miserable driveler and pedant, James VI. of Scotland, defended this "trial by water," inasmuch as witches *having renounced their baptism, so it is just that the element through which the holy rite is enforced, should reject them!* This pusillanimous monarch, who *shook* at the sight of a *drawn sword*, was the keenest instigator in his kingdom of tortures and prosecutions for suspected witchcraft, and he continued so after his accession to the English throne. He was often *present* at the examination of accused persons, and the Scotch juries did not dare to acquit their victims, fearing the severest punishment on themselves for "willful error upon an assize," a proceeding which left them at the mercy of the Crown, and which was in some instances actually resorted to!

The elves or fairies, the dwarfs, etc., have sorely afflicted the shepherd, as well as all other husbandmen, in bygone days. Their caprices were innumerable. Even in this, as Mr. Carlyle would say, 19th century of God's world, the ugly and monster-headed *Phaam* is sometimes seen on the lonely Kells of Galloway, and the declivities of the eastern Grampians. He not unfrequently shows himself in the dawn of the morning on the mountains around Cairn Gorm and Lochavon, and if man or beast even goes near the place where he has been before the sun shines upon it, straightway their heads swell enormously and they often die.—This is the origin of that frequent disease, the "swelled head" in sheep! At least, so the inhabitants of those regions informed the Ettrick Shepherd. (See Hogg's Shepherd's Guide.) But alas! for the gay and courtly Fairies—the very aristocracy of goblin-dom! Who would not have his flocks, yea, and his herds too, annually decimated to restore them to our utilitarianized world! Oberon, Titania, Mab, Puck and Ariel are gone! They no longer

— "on the sands with printless foot  
Do chase the ebbing Neptune, and do fly him  
When he comes back"—

no longer

— "in the spiced Indian air, by night,  
\* \* \* \* \*  
They dance their ringlets to the whistling wind."

The elves of the colder regions north of the Alps, who erst danced their "roundel rites" on the banks of the Rhine and the green hillocks of Britain—who with their splendid appointments, coursers whose feet spurned the limber air, saddles of "rewel bone"

"Bryht with mony a precious stone  
And compasyd all with crapste,"

outshone the splendors of Chivalry—who fought manful under shield, wounding and discomfiting even human antagonists, as related by Gervase of Tilbury, and by Heinrich von Osterdingen in the *Heldenbuch*—who loved, wooed and were won much after the human fashion, and sometimes exchanged such favors with humanity, as is proved by the adventure of Thomas the Rymer under the "Elden tree"—all are gone! The wands of Scott and of Bulwer could not stay their departure! Naked, rugged-featured, unpoetical Utility has it all her own way now-a-days!

In the language of Rt. Rev. Dr. Corbett, Bishop of Oxford and Norwich in the beginning of the 17th century,

"Lament, lament, old abbeyes,  
The Fairies' lost command;  
They did but change priests' babies,  
But some have changed your land;  
And all your children sprung from hence  
Are now grown Puritans,  
Who live as changelings ever since  
For love of your domains."

ands—and in 1830–1, the number swept off much exceeded two millions.\* Its ravages are equally fatal in Germany, and more so in Egypt. It is also common in France, Spain, Australia, &c. There is nothing sufficiently marked in its diagnosis to effectually distinguish it from some other diseases, to a person possessing no previous practical acquaintance with it, or no more veterinary knowledge than is common among farmers; and when a slow train of wasting symptoms have occurred, and the structure of the liver is found disorganized, after death, it is not uncommon in this country to pronounce it a case of the rot. The same mistake, according to Dr. Coventry (late Professor of Agriculture in the University of Edinburgh), is often made by even the shepherds and flock-masters of Europe.† There are other diseases besides the rot which specifically attack the integrity of the liver. Even *fasciola* or flukes in the liver, the most infallible diagnostic, to the common eye, of the rot, also, according to Dr. Coventry, accompany *hepatitis chronica*. I will not take upon me to deny that the rot ever exists in the Northern States, but I have yet to see, or hear of, adequately authenticated, the first undoubted instance; and this would go to show that if isolated cases of it do sometimes occur, it has dwindled from the wholesale destroyer of Europe to an obscure and occasional disease. The same remarks apply to existence of the disease in the Southern Atlantic and Gulf States, judging from the statements of my correspondents, and from the agricultural newspapers. I cannot learn from either of these sources that anything analogous to this malady is common in those States. According to Mr. Cockerel, of Tennessee, and Mr. Flower, of Illinois, the rot *does* prevail in our Western States; and the latter gentleman, who has, I presume, seen the disease in Europe, and who ought therefore to be familiar with its *præ-mortem* and *post-mortem* appearances, states that it occurs in Southern Illinois “from suffering sheep to pasture on land that is overflowed with water;” and he adds, “even a crop of green oats, early in the fall before a frost comes, has been known to rot young sheep.”

It is worthy of remark that Mr. Livingston—equally distinguished for research and observation—does not include the rot in his list of American ovine diseases. This affords a strong corroboration of the position I have assumed in relation to the existence of this disease in the North-eastern States, and those of the Southern ones lying east of the Apalachians.‡

The Hoof-ail, though introduced here by contagion, and kept in constant existence by the same means, does not appear, in the common phrase, to *originate spontaneously*, as in Europe; or, in other words, to be excited by any other causes than contagion. I have never known an instance going, even colorably, to prove the contrary of this proposition.

Acute dropsy or Red-water, I judge to be an exceedingly rare disease in the Northern States, though the author of the American Shepherd thinks differently.||

Enteretis, or inflammation of the coats of the intestines; blain, or inflammation of the cellular tissue of the tongue; and a whole train of other diseases—including most of the frightful list of infectious or contagious European epizootics—seem to be unknown in this country.

Why there should be so wide a difference between the ovine nosology of Europe and the United States, is a matter of curious and interesting speculation. Whether it will always remain so, or whether the advent of

\* Youatt on Sheep, p. 445.

† See remarks of Dr. Coventry, quoted at some length in Mountain Shepherd's Manual, p. 20.

‡ I limit the remark to the States lying (mostly) east of these mountains, because they would probably be the only ones, at the time at which Mr. Livingston wrote, with the Sheep Husbandry of which he would be supposed to be familiar.

|| American Shepherd, p. 359.



the European diseases is only delayed here for more artificial systems of feeding, breeding, or perhaps more artificial systems of Agriculture affecting the aliment of the sheep, or other and unexplainable causes, time alone must determine.

If we look for these differences in the observable differences of climate, we find no satisfactory solution of the problem. The climate of England is essentially different from our own—but that it is a favorable one for the healthy development of all the animal tissues, her large, strong, long-lived population, as well as her well-developed animal kingdom, abundantly attest. The atmosphere of England is a moist and humid one, and moisture is thought to be one of the necessary predisposing causes of both rot and hoof-ail. Of the origin of the former disease, Mr. Youatt remarks: \*

"The rot in sheep is evidently connected with the soil or state of the pasture. It is confined to wet seasons, or to the feeding on ground moist and marshy at all seasons. It has reference to the evaporation of water, and to the presence and decomposition of moist vegetable matter. It is rarely, or almost never, on dry and sandy soils and in dry seasons; it is rarely wanting on boggy or poachy ground, except when that ground is dried by the heat of the summer sun, or completely covered by the winter rain. In the same farm there are certain fields on which no sheep can be turned with impunity. There are others that seldom or never give the rot."

Mr. Youatt continues his descriptions of these predisposing conditions at great length, and his final conclusion is, in substance, that the miasmata, or gases exhaling from the decomposition of vegetable substances, are the causes of the rot. Mr. Spooner adopts the same views; indeed, they are universally received among scientific veterinarians.

If these views are correct, the evil lies not in a generally humid *atmosphere*, but in a generally or temporarily humid *soil*; and that they are true *quo ad hoc*, is proved by the fearful ravages of the disease in the driest atmosphere of Germany, in the clear, dry atmosphere of the South of France, and under the torrid skies of southern Spain, where rain does not fall for months.

Boggy or fenny soils, where decaying vegetable substances are constantly exhaling their gases, are to be found in all parts of the United States—more or less, in every township, and almost every school district of New-York and New-England. Sheep pasture on such lands, promiscuously with other stock, in every county—and, in the latter States, at least, with entire impunity from the rot.

Humidity of soil is also supposed to be the most prominent cause in *originating* hoof-ail, or producing it otherwise than by contagion. Mr. Youatt and Professor Dick attribute the disease most often to the effect of sand and dirt forced into the pores of the hoof, when macerated by moisture. The following is the language of Professor Dick:

"The finest and richest old pastures and lawns are particularly liable to give this disease, and so are soft, marshy and luxuriant meadows. It exists to a greater or less extent in every situation that has a tendency to increase the growth of the hoofs without wearing them away. . . . The different parts of the hoof, deprived of their natural wear, grow out of their proper proportions. The crust, especially, grows too long; and the overgrown parts either break off in irregular rents, or by overshooting the sole allow small particles of sand and dirt to enter into the pores of the hoof. These particles soon reach the quick, and set up the inflammation already described and followed by all its destructive effects."†

The same writer assigns another cause for it—inflammation induced by an improper bearing of the foot, caused by the unnatural growth of the horn on wet pastures.

Mr. Spooner attributes the disease to decaying vegetables—"roots and

\* Youatt on Sheep, p. 451.  
(845)

† See Dick, quoted by Youatt, p. 527, 528.

leaves of the grasses in a state of rottenness"—brought in contact with the sheep's foot when "blanched and weakened by continual moisture!"\*

There is another point of difference in the pathology of ovine diseases in this and the old world, judging from the details furnished by the English veterinarians. Most of the pyrexial diseases, in England, are accompanied, at least in their initiatory stages, with active inflammatory symptoms. Fever runs high, and decidedly antiphlogistic treatment is called for. On the other hand, so far as my observation and inquiries have extended, the ovine diseases of the United States are usually of an æsthenic nature—characterized by debility from the outset. The difference in the physical character, feeding, and ordinary state of fatness of the sheep of the two countries, offers, perhaps, a sufficient explanation of these facts. The gross, high-fed English sheep, forced forward by bountiful feeding to an unnaturally precocious maturity, is always in a high state of plethora, and predisposed, therefore, to inflammatory action. A slight derangement of any function, produced by a cold, by an error in feeding, or by any other causes, is sufficient to make the organs exercising those functions the seat of such action. On the other hand, the sheep of the United States, kept mainly for wool-growing purposes, is rarely raised above a moderately fleshy or medium condition. And, unexcited by an unnaturally plethoric habit, the weak vascular and muscular system of the animal little predisposes it to inflammatory disease.

A difference in the pathological character of disease requires a corresponding difference in the system of therapeutics adopted. The English system of therapeutics is decidedly objectionable, here, *first*, on the account just named; *secondly*, from its expensiveness; and, *thirdly*, (for popular purposes,) by the extent and complexity of its pharmacology.

1. As has been already remarked, most of the English ovine diseases commence with pyrexia—and the fever is synochal or inflammatory in its type. The subject is strong, plethoric, and full of blood. Antiphlogistic treatment is clearly called for. Accordingly, depletion, by bleeding or purgatives, or both, is first and promptly resorted to by the English veterinarian. In the United States, also, most important constitutional diseases commence with pyrexia, but the fever in its first *discovered* stage is almost uniformly of a low, sinking, typhoid type, accompanied with great prostration of muscular energy. The animal is in a leanish or only moderately fleshy condition. It has been confined to dry, and perhaps rather unnutritious food—for most of the list of constitutional maladies, here, make their attacks in the winter, and old, lean, and feeble sheep are usually the first victims. A sheep is observed drooping, and indifferent to food. It is caught and examined. Whatever organ or portion of the system is laboring under attack, bleed so as to produce a constitutional impression, (which the English veterinarians almost invariably recommend, where they recommend bleeding at all,) and follow this with an active purgative, and in four cases out of five the sheep will, in the expressive phrase of the English shepherds, "take the ground"; it will never rise from the ground more without assistance, and will soon become unable to stand when set upon its feet. Growing weaker and weaker, it soon refuses to eat, and death supervenes. These remarks are not designed to apply to stall-fed wethers, or other very high-conditioned sheep.

2. The English, and indeed the European method of treating diseases is too *expensive* for this country. In curing hoof-ail, *e. g.*, Mr. Youatt, after recommending washing in chloride of lime, and cauterizing, says:

\* This seems to me a most unphilosophical cause to be assigned by a veterinarian of the standing of Mr. Spooner.

"If the foot has been in a manner stripped of its horn, and especially if a considerable portion of the sole has been removed, it may be expedient to wrap a little clean tow round the foot, and to bind it tightly down with a tape, the sheep being removed to a straw-yard, or some inclosed space, or to a drier pasture. . . . The foot should be dressed every day, each new separation of horn removed, and every portion of the fungus submitted to the caustic."\*

Mr. Spooner recommends daily, and not less troublesome treatment.† The Mountain Shepherd's Manual recommends daily treatment,‡ and this is the case, I believe, with nearly all, if not all, of the foreign veterinarians. Professor Pictet, of Switzerland, in addition to daily applications, fumigations, etc., innumerable, goes a step beyond "tow pledgets and tape bandages." He says:

"In order to prevent any dirt, &c., from getting into the wound, the diseased foot should be placed in a little boot, the sole of which is of feather or felt, and the upper part of cloth, in order to fasten it round the leg of the sheep."

This disease rages most when haying and harvesting are at their hight, in the Northern States—in July and August—and when the labor of day hands costs from seventy-five cents to a dollar per head per diem. Half the flocks in the country can then be bought for \$1 25 per head. How soon daily parings, cauterizings, embrocations, fumigations, etc., including the expense of drugs and Professor Pictet's *gaiter-boots*, would reach an expense equivalent to the price of a sound sheep, it requires not the exercise of much arithmetic to determine! It would certainly be more economical to kill sheep of any ordinary grade in the first instance!

The same remark will apply to the English system of treating nearly all important diseases. The labor bestowed on it would be worth more, here, than the value of the sheep.

3. The English ovine veterinary pharmacopœia is too extensive and complex for popular use. The prescribed formulæ are so compound in their character—so minute oftentimes in their quantitative proportions—require so much skill for their chemical and mechanical admixture—and, lastly, and more important than all the rest, they demand so much medical knowledge for their proper and timely administration—that they can be generally used with safety and advantage only by professional veterinarians, a class entirely wanting, unless occasionally in cities, in the United States. Besides, our ordinary country drug-stores are usually lacking in many of the articles included in the European prescriptions||—and no one, without possessing considerable medical knowledge, could decide what effect it would have on the prescription to subtract this or that ingredient. It might neutralize its effects, or even render it pernicious.

A veterinary system for anything like *popular use*, in this country, must be exceedingly simple in its remedies, and in its rules for their administration. As it is impossible to describe the various symptoms which may exhibit themselves in a disease, so as to be understood by all, it is unsafe to prescribe a constant change of medicines, applicable to the several states which have caused those symptoms to appear. Indeed, changes in medicine should only be made consequent on those distinct crises of disease which can be detected and understood by the most ordinary observer. Prescriptions, therefore, inapplicable, or at least unsafe, in any stage from one distinct crisis of disease to another, should, as far as practicable, be avoided. True, such a system of therapeutics will be very imperfect, particularly in the treatment of serious constitutional maladies. But it will go

\* Youatt, p. 529.

† Spooner, (endorsing the views of Mr. Read,) p. 438 to 442.

‡ *Quem vide*, p. 27.

|| Not unfrequently the most important ones, as I know from repeated experience.



as far as the knowledge of the uninstructed practitioner will safely admit of—and if, even in cases of constitutional disease, it should simply cause him to *do no hurt by his interference*, and prevent him from resorting to some miserably ignorant empiric\*—*the most important object, perhaps, would be attained.* It is infinitely safer in such diseases to rely on unaided Nature to effect the cure, than to submit a sheep, or any other animal, to the drugging and dosing of a person ignorant of the true nature of the disease, and of the remedies which he employs. It is better to *do too little* than to *do too much*; and in all cases where *it is not known what to do*, it is better to *do nothing*.

Lord Weston, in a letter to Mr. Bischoff, says :†

"I have little to say on the medical treatment of sheep; my study is prevention by sufficient wholesome food, with a constant and abundant supply of salt in every yard and every field. . . . When sheep are taken ill, there is little hope for them, and rarely any use in administering medicines."

If the latter portion of this remark is true among the educated, intelligent and experienced veterinarians of England, how much more must it be so among those destitute of even the first rudiments of veterinary science! In relation to some of the more serious constitutional maladies, after considerable experience and observation, I feel constrained to express the opinion that the remark *is*, to a considerable extent, true. The sheep is almost as unsatisfactory a patient to deal with, in some such cases, as the hog, of which it is frequently said, with no great exaggeration, "that if he is seriously sick he is sure to die, and the more you do for him the sooner he will die!" "Then why give a therapeutic system at all in a class of diseases where it will do so little good?" In the first place, the cases are perhaps few where judicious prescriptions will not *somewhat* diminish the tendency to a fatal result; but the great reason, after all, is, that every man having a sick animal *will* dose and physic it, or *will* permit some officious neighbor to do so, or *will* call in that most dangerous of all *epizootics*, the cattle-doctor. It is therefore better in the most hopeless cases, to give a few simple directions, based on sound medical principles, which will not, at all events, *aggravate the disease*, and which will *tend* to alleviate or suppress it, rather than to surrender the helpless animal over to the additional tortures inflicted by ignorance and quackery. Fortunate it is that well-managed sheep, in this country, are so little subject to such diseases!

In classifying diseases, I shall depart from the system adopted by Youatt, Spooner, etc., who arrange them with reference to the parts of the system they more especially attack, as, for example, "diseases of the brain,"

\* The self-matriculated "cattle doctor" is a decidedly interesting personage. His qualifications are numerous, and it is somewhat difficult to find them all brilliantly combined in the same person. He should be the most ignorant man in the town, particularly in everything relating to the anatomy and physiology of man or beast. He should be equally ignorant of the chemical and medicinal properties of nearly all the drugs used by him. His prescriptions, to give them due potency, should consist of a great number of ingredients—a large portion of them bearing very "*hard names*." He should flunk and fortify these, at least in all difficult cases, with substances possessing rare occult virtues, entirely unknown to "human physicians," such as the "blood of black cats," the "entrails of fowls," "human faces," simples culled under peculiar circumstances—

"Root of hemlock, digged i' the dark,  
\* \* \* \* \*  
\* \* \* \* \* slips of yew,  
Slivered in the moon's eclipse."

He should decidedly affect the mysterious, and should always repel the attempted intrusions of ordinary humanity—the profane vulgar—into the arcana of his high art. He should have half a dozen maladies, such as "baked in the manyfolds," "overflow of the gall," "kidney disease," "rising of the lights," "strained across the loin," etc., to which he can promptly assign all the ills which beasts are heir to. He should never mistake a disease or a remedy. If the patient dies, it should invariably be in consequence of a deviation from his directions!

† Bischoff, vol. II.  
(848)

"diseases of the digestive organs," &c. This method of classification, though not without its advantages, and though it would seem, at first view, to present an arrangement most convenient for reference, examination and comparison, in the end, leads, I think, to confusion and misunderstanding.

#### ANATOMY OF THE SHEEP.

He who breeds sheep to any considerable extent, should make himself familiar with the anatomical structure of some of the parts of the animal—particularly with the arrangement, size, natural appearance, consistency and contents of the several viscera; to some extent with the circulatory system; with the alimentary and respiratory organs; with the brain, and the whole osseous structure of the head. He should be in the constant habit of making more or less extended examinations of all these structures, as opportunity occurs by the slaughter of sheep for economic purposes; and when the animal dies from disease, such examination should be in no ordinary case omitted by the flock-master who is *desirous of making himself thoroughly acquainted with his business*. He will require some instruction, in the outset, to enable him to make such dissections understandingly and properly; but he can readily obtain this from any educated physician or surgeon. There are no sufficiently wide differences in the anatomical structure of the sheep and of the human being, to give the surgeon the least difficulty in pointing out the arrangement, uses, &c., of the several parts of the former, unless it be in the conformation of the stomachs.—Here, the structure of the sheep, like that of other ruminating animals, differs widely from man, but that physician or surgeon must have been singularly limited in his physiological investigations, who has not made himself acquainted with it. At all events, a glance at a veterinary work, while conducting a dissection, will enable him to understand, and explain it to the learner. The learner while making his examinations in company with, and under the direction of the surgeon, should *perform every manipulation*: his own hand should handle, remove, test the consistency, &c. of the parts—alone wield the saw and guide the scalpel. This is an important rule if he would *understand and remember*.

The subjects of a portion of the examinations should be sheep killed in full health. It is necessary to be familiar with the healthy appearance of all the parts, so as to distinctly recognize all departures from it—the effect of any diseased or abnormal action.

The sides of a lean sheep are more translucent, after being skinned, than those of a fat one, and therefore the former makes a better subject, if the circulatory system is to be examined. On the sides of the thorax and abdomen, at a little distance from the spine, the veins and arteries of those parts can often be traced with beautiful distinctness, without any dissection of the intercostal muscles.

Subjects should be examined which have had their blood drawn (by having their throats cut), and also those which have died with all their blood in them. Some of the viscera—*e. g.* the lungs, veins and arteries—will present very different appearances under these different circumstances; and this fact not understood might frequently lead to very erroneous conclusions in *post mortem* examinations.

I will give a very general description of the parts I have mentioned as necessary to be studied—designed merely for those who have no previous knowledge of the subject.

After the animal has been neatly skinned, place it on a low table, an assistant grasping its fore-legs, and holding it firmly on its back. Then slit

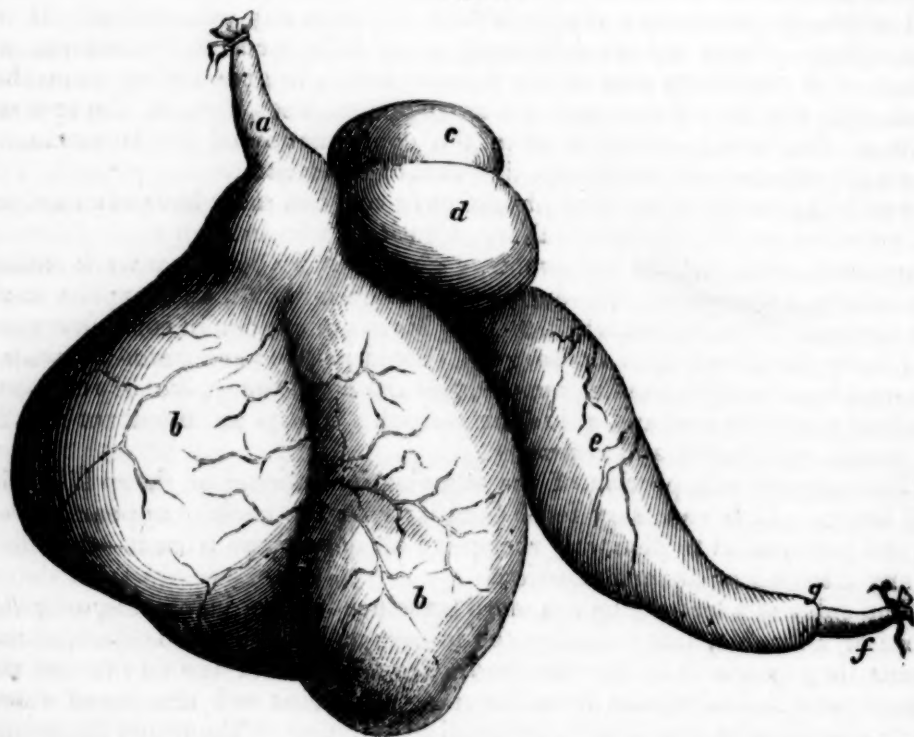
open the belly from the middle of the *sternum*, or cartilaginous connection between the ribs, to the anus. In making this and all similar incisions, hold the edge of the knife upward, guarding its point with the fore-finger, so that the viscera shall not be wounded. The abdomen—the whole cavity of the trunk back of the diaphragm or “midriff”—is now laid open. It is usually necessary for a better examination of the parts to make cross incisions part way between the diaphragm and anus, extending down on each side several inches toward the backbone.

I shall describe the viscera in the order in which I have usually examined them.

On opening the abdomen the *omentum* or caul is found covering the intestines. It is a thin, and, in a normal state, colorless and transparent structure, formed of two membranes, between which extend streaks of fat in the form of a net.

The external appearance of the stomachs is given in the following cut of those of a young sheep which died of disease. Their arrangement is slightly different in the animal.

Fig. 47.



THE STOMACHS.

- a. The oesophagus or gullet, entering the rumen or paunch.
- b. b. The rumen, or paunch, occupying three-fourths of the abdomen.
- c. The reticulum, or honey-comb—the 2d stomach.
- d. The manipus, or many folds—the 3d stomach.
- e. The abomasum, or 4th stomach.
- f. The commencement of the duodenum or first intestine.
- g. The place of the pylorus, a valve which separates the contents of the abomasum and duodenum.

The walls of the rumen or paunch consist of four coats or tunics—1st, the peritoneal or outer coat; 2d, the muscular; 3d, the mucous, covered with papillæ, or little protuberances, from which (or glands under which) is secreted a peculiar fluid to soften and prepare the food for re-mastication; and, 4th, the inner or cuticular coat, a thin, entirely insensible membrane, which defends the mucous coat from abrasion or erosion.



The reticulum or honey-comb is composed of the same number of coats, fulfilling similar functions. But the mucous coat, in addition to minute papillæ, is covered with elevations arranged in pentagons and sexagons of different sizes, somewhat resembling a honey-comb, except that the cells are larger and shallower.

The *manipulus* has the same four coats. Its *floor* is a continuation of the *œsophagean* canal. From its *roof* depend many parallel folds of the cuticular coat—here thicker and stronger than in the other stomachs—reaching nearly to its floor. The cuticle is covered toward the edges of the folds, with hard, bony processes, shaped like fangs, or cones bent in a curvilinear form, and pointing toward the entrance of the stomach. The interior of each fold or leaf contains muscles which impart to it the power of a peculiar and forcible motion. There are forty-two of these folds in the *manipulus* of the sheep—occasionally forty-eight. They do not all equally nearly approach the *œsophagean* canal, but are disposed in groups of six—one of the central ones of each nearly reaching the canal or floor of the stomach—the others on each side growing shorter and shorter, so as to form a series of irregular reëntering angles.

The *abomasum* is the digesting stomach, where the gastric juices are secreted, and where the pultaceous food is converted into chyme. It is funnel-shaped, and its lower extremity connects with the intestines, as shown in the cut. The cuticular lining of the three preceding stomachs is wanting in this. The mucous coat is disposed in the form of *rugæ* or shallow folds, arranged longitudinally with the direction of the stomach, and from this membrane the gastric juices are secreted.

The comparative size of the four stomachs will be sufficiently seen in fig. 47.

Where the *œsophagus* enters the rumen, it terminates in what is called the *œsophagean* canal, a continuation of the former constituting the roof of the latter. The bottom or floor of this canal is formed of divided portions or folds of the upper parts of the rumen and reticulum—muscular “pillars” or “lips,” as they are sometimes denominated—which may remain closed so that the food will pass over them into the third and fourth stomachs—or they may open, permitting the food to fall between them, as through a trap-door, into the first and second stomachs. It is probable that the opening of these lips, as food passes over them, depends somewhat upon a mechanical effect, and somewhat upon the will of the animal. Fluid and soft pultaceous food fit for immediate digestion glide over them. But most of the food of the sheep, like that of other ruminating animals, is swallowed with little preparatory mastication; and these untritured solids drop down through the first opening above described into the rumen. It is certain, however, that the animal can, at will, also cause water to pass through the opening into the first stomach. This would be necessary in the animal economy, and the water is always found there.

When the food has entered the rumen, the muscular action of that viscus compels it to make the circuit of its different compartments, and, in time, the food later swallowed forces it on and up to near the opening where it originally entered. In its passage it is macerated by a solvent alkaline fluid secreted by the mucous coat. The papillæ of that coat are supposed to influence the mechanical action of the contents of the stomach, and perhaps, to a certain extent, to aid in trituration. The food performs the circuit of the stomach, and is ready for re-mastication, according to Spallanzani, in from sixteen to eighteen hours. By a muscular effort of the stomach, a portion of it is then thrown over the membranous valve or fold which guards the opening from this into the second stomach.

The reticulum contracts upon it, forming it into a suitable pellet to be returned to the mouth, and also covers it with a mucus secreted in this stomach. By a spasmodic effort (always perceptible externally when the sheep or cow commences rumination) the pellet is forced through the roof of the reticulum, by the opening before described, and returned to the mouth by the contractions of the spiral muscle of the œsophagus or gullet, for mastication.

This explanation of the functions of the second stomach is not accepted by all the physiologists who have examined this subject. Some contend that all the solid portions of the food are returned directly from the rumen for re-mastication; that when raised to the floor of the œsophagean canal, the hard parts are carried up to the mouth—the more pultaceous ones (but still not sufficiently pultaceous for the fourth stomach) passing into the reticulum, where they are again macerated—the fluid squeezed out of them by a contraction of the stomach and allowed to pass on to the fourth stomach—and then the drier parts raised, like those from the paunch, for re-mastication. More solid and indigestible substances “may be submitted two or more times to the process of rumination.” Such appear to be the views of Mr. Spooner.\*

According to this theory, both stomachs are created substantially for one and the same purpose, and one would seem to be unnecessary. And where would be the use of the opening from one stomach into the other? And if the second stomach, like the first, is simply for the maceration and return of food, why the superior thickness and strength of the coatings of the former? Being of a volume greatly inferior to that of the latter, it certainly would require less strength, if the functions of both were the same.

The main support for this, as it seems to me, erroneous theory, is found in the fact that the contents of the reticulum, after death, are usually found considerably *more fluid* than those of the rumen. I conceive that but small portions of solid food are introduced at one time from the rumen into the reticulum—not enough to give to the liquid contents of the latter viscus the consistency of those of the former—proceeding on the supposition that the reticulum of the living animal is *filled* with fluid, as usually found after death. But why may not a portion of this fluid have escaped by the valve—been decanted, as it were, from the paunch to the reticulum, *after death*? I see no violence in this supposition. If this is not so, the *uniform* fluidity of the contents of the reticulum would be, it seems to me, fatal to the theory based on it—for, according to Spooner and others who adopt it, after the reticulum has “become moderately full,” it contracts on its contents, expressing the liquid from the solid parts, which said liquid is forced into the œsophagean canal, and escapes into the fourth stomach. The solid parts would be thus left comparatively dry. Sheep penned up for butchery often do, as every one has observed, ruminate until within a few seconds of the time that all their natural visceral functions are suddenly suspended by death—and when, therefore, this suspension would, at times, as a matter of course, take place at all the different stages of rumination and preparation for rumination—how happens it that the reticulum is not often found with its liquid parts expressed—containing nothing but the solids, just prepared for re-mastication? Or if it be supposed that the act of forcing out the liquid, and forcing up the solids into the œsophagus, are coincident or simultaneous, why is not this stomach *sometimes* found *entirely empty*? Can it be supposed that this fluid (I have *uniformly* found the fluid mixed with considerable quantities of the solid food) is so instantaneously re-supplied?

\* Spooner, p. 162-3.  
(852)

If so, by what process? I think there are other reasons which support the view I have taken, but I will not push the discussion, there not being, so far as I am aware, any questions to be solved by it which directly and practically affect the interests or the practices of the sheep-breeder.

Let us now observe the course pursued by the food, and the process to which it is submitted, after rumination. It now glides *over* the trap-doors which open into the first and second stomachs. As it passes over the floor of the third, or the *manipulus*, the pendant leaves of this viscus, armed with their beak-like protuberances, seize the advancing mass, and squeezing out the fluid and the more finely comminuted portions of the food which escape with it, commence triturating the bulkier fibrous portions between their folds. Their bony papillæ give to these folds something of the mechanical action of rasps, in grinding down the vegetable fibre. The food being now reduced to an entirely pultaceous state, passes into the fourth stomach, or *abomasum*, where it is acted upon by the gastric juice, and converted into chyme. The amount of food found between the folds of the *manipulus*, after death, depends upon the time that has elapsed since rumination. It is dry and hard, compared with the contents of the other stomachs.

The entrance to the fourth stomach—the *cardiac* opening—is closed against regurgitation or vomiting, by a sort of valve, composed of a portion of one of the *rugæ*, before alluded to, which line the interior of this stomach. The *pylorus* is also closed by a valve, which prevents a premature passage of the contents of the stomach into the intestines.

The intestines are exhibited in fig. 48, copied from Mr. Youatt's work.

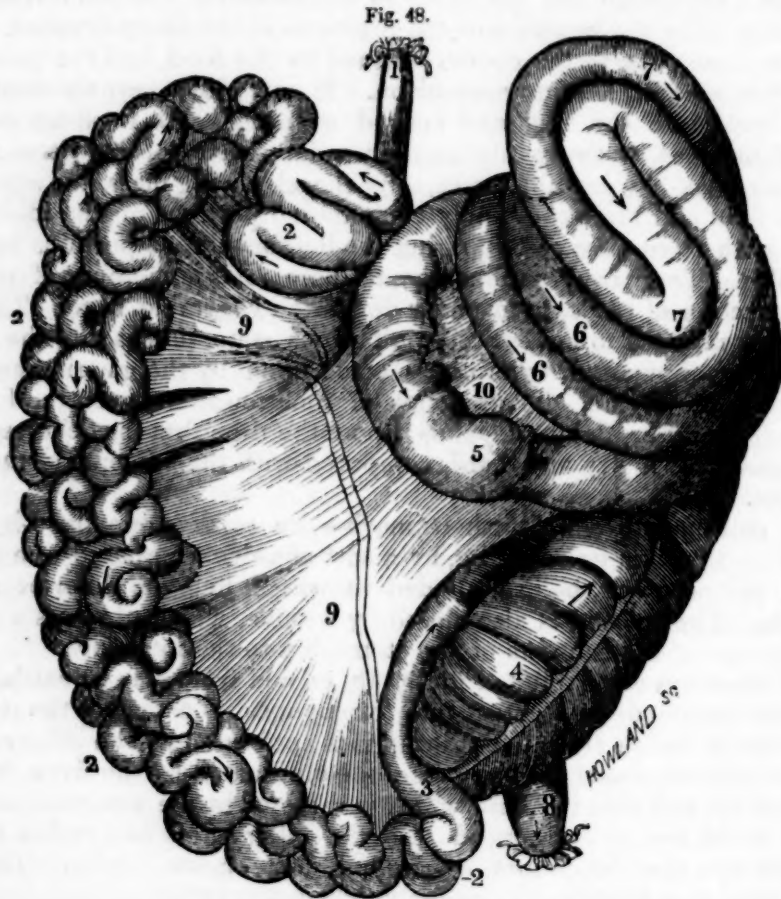
Before the duodenum enters into (or changes its name to) the jejunum, and about 18 inches from the pylorus, it is perforated by the biliary duct—*ductus choledochus*—which brings the bile eliminated by the liver, from the gall-bladder, and also the fluid which is secreted by the *pancreas*, or sweetbread, which last is introduced into the biliary duct two inches from its entrance into the duodenum, by another duct or small tube. The compound fluid thus introduced into the duodenum exercises various important offices in the digestive and assimilating processes. The bile is supposed to aid in the separation of the chyme into chyle and fecal matter—or the nutritive parts of the food which are assimilated into blood, from the innutritious parts which are discharged as excrement. It also prevents a putrid decomposition of the vegetable contents of the intestines, and serves various other useful purposes.

The chyle—a white albuminous fluid, with a composition differing but little from that of blood—is taken from the intestines by a multitude of minute ducts called *lacteals*, which traverse the mesentary, constantly uniting as they advance, so as to form larger ducts. These enter the mesenteric glands—small glandular bodies attached to the mesentary—after the passage of which the chyle begins to change its color. The *lacteals* still continue to unite and enlarge, and finally terminate in the *thoracic duct*. In this the chyle is mingled with the *lymph* secreted from a portion of the *lymphatics*—another exceedingly minute system of absorbent ducts, which open on the internal and external surfaces of the whole system. From the thoracic duct, the chyle is conveyed to the heart, and enters into the circulation as blood.

THE SPLEEN.—With the appearance of the spleen or milt—in the sheep a dark, firm, spongy viscus, attached to the rumen, and lying on the left side of the belly—all are sufficiently familiar. Its uses and functions in



the animal economy are not well understood, and it has in some instances been removed from the living animal without the apparent derangement



THE INTESTINES AND MESENTERY.

1. The duodenum.
  2. The jejunum.
  3. The ileum.
  4. The caecum, being the anterior prolongation of the colon, or first large intestine. The ileum opens into this (on the back side as presented in the cut), about twelve inches from its extremity—the opening being defended by a valve.
  5. The large anterior portion of the colon, retaining its size (about three times that of the smaller intestines) for about two feet.
  6. The colon tending toward the center.
  7. The returning convolutions of the colon.
  8. The rectum or straight gut, communicating with the anus.
  9. The mesentery, or that portion of the peritoneum which retains the intestines in their places.
  10. The portion of the mesentery supporting the colon, &c.
- The united length of these intestines is upward of sixty feet!

of any function. Mr. Youatt conjectures that its main office is to supply the coloring matter of the blood.

**THE PANCREAS.**—The pancreas or sweet-bread, with the appearance of which all who have noticed the entrails of a sheep, are also familiar, is a glandular body found on the left side of the belly. It has a series of ducts which unite into a larger one, and, as before stated, this discharges a transparent, albuminous, and somewhat acid fluid into the biliary duct near the point where it enters the duodenum. This fluid acts some unknown, but probably necessary part in preparing the chyme for the offices it is to perform in the animal economy.

**THE LIVER.**—The liver is much larger in proportion, in the sheep, than in the horse and ox; and it is twice the proportionate size of that of Man.

It is situated mostly on the right side, between the maniplus and diaphragm. It is supplied with arterial blood, and receives the venous blood which is conveyed from the intestines, from which it separates the bile, and conveys it to the *gall-bladder*. The bile having undergone certain changes in this bladder, is conveyed, as already stated, by the biliary duct, to the duodenum. The venous blood, after the gall is separated from it, is returned to the lungs, to undergo the process which fits it again to enter into the circulation.

#### THE URINARY AND GENERATIVE ORGANS.

Though it might seem the more natural order to complete the examination of the circulatory and respiratory organs, before taking up those named at the head of this paragraph, I shall, adhering to my first arrangement to follow the order which I have uniformly pursued in making dissections, first complete the description of those of the abdominal cavity.

**THE KIDNEYS.**—The kidneys are two bean-shaped glands firmly attached to the roof of the abdomen, and usually imbedded in fat. They are supplied with blood by large arteries, and, having filtered out the urine from it, they discharge the latter through two ducts, termed *ureters*, into the bladder. The passage of these ducts through the walls of the latter is in an oblique course, so that it is closed by pressure from within, and thus the urine cannot return.

**THE BLADDER.**—The bladder joins the *urethra*, in the pelvis, and its posterior part is attached to the floor of that cavity. The anterior part, where the diameter is larger, floats free in the abdomen. A circular muscle or *sphincter* closes the entrance into the urethra, to prevent the continuous escape of the urine, and this relaxes when the muscular coat of the bladder contracts for the periodical expulsion of that fluid. The urethra is but a few inches long in the ewe, and opens into the vagina. It is much longer in the ram, as it extends the whole length of the penis.

**THE UTERUS AND VAGINA.**—The vagina is several inches in length and opens into the uterus or womb by a circular opening which becomes closed after impregnation. They are situated between the rectum above, and the bladder below. They are mostly within the pelvis in the unpregnant animal, but the womb rises into the abdomen when it encloses a foetus. The womb is a cylindrical body with two "horns" or branches. At the interior extremity of each horn are protuberances, of a red color, called *ovaries*, which are supposed to contain the germs of the offspring.

**ARTIFICIAL STONE.**—It is said that a process has been patented in England for making artificial stone of every quality, from artificial granite to statuary marble. The invention is stated to be founded on a chemical analysis of the natural varieties of stone. It is made of flinty and siliceous grit, rendered fluid by heat, and poured into moulds till cooled and hardened. The artificial stone has, as is stated, already been used for coping-stone, for variegated pavements for halls and rooms, stone ornaments—such as mouldings for friezes; also for grindstones and hones. The invention is thought to be particularly applicable to the lining of cisterns and water-pipes—its various qualities insuring cleanliness. The process of manufacture is said to be easy and cheap—'stones manufactured to order.'

**INK SPOTS**, on mahogany, may be easily removed by rubbing them with wet blotting-paper, and afterward rubbing the spot with a dry cloth.

## THE NEW-YORK STATE AGRICULTURAL SOCIETY

HELD its Annual Meeting in Albany on the 19th and 20th of January. The President, Mr. VAIL, stated the permanent fund of the Society to be \$8,000. Mr. J. M'D. M'INTYRE, the Treasurer, read his Annual Report:

Balance from last Report and receipts from various sources during the year ..	\$6,457 19
Disbursements during the year—Premiums paid.....	\$2,266 73
Incidental expenses .....	514 78
Library .....	61 22
Salaries .....	947 27
Expenses, 1846 .....	312 88
Other expenses .....	547 75
Invested 1st October last.....	1,000 00
	<hr/>
	5,650 63
Balance on hand.....	806 56
	<hr/>
	\$6,457 19

Mr. GEDDES, of Onondaga, gave notice that at the next Annual Meeting of the Society he would move an amendment to the Constitution so as to *exclude the ex-Presidents of the Society from the Executive Committee*, they having been added to the Board by an amendment adopted last year. We presume there must be some rule which requires a year's notice to be given in such cases, for otherwise the propriety of the measure suggested would appear to be but too self-evident. After all, however, by whom is it likely to be finally decided?

Under this amendment, making all previous Presidents (a new one every year) acting members of the Executive Committee, how many years will it be before the elective portion of the Committee will be overlaid, and the whole finances, management and influence of this State Institution be in the hands of its *life officers*? Instead of perpetual power, there should in such cases rather be perpetual rotations, in order to preserve public confidence and prevent suspicion and complaint—all unworthy and ill-founded even as we may admit these might be: in the business and affairs of this world, we must take the world as we find it—not as it ought to be. Besides, the body of water that is ever stationary is not apt to be so lively and healthful; motion is not only the sign but the source of vitality. Where there is no change of rulers, fixed ideas, long-cherished opinions and plans take the place of wholesome agitation, inquiry and progress. Even the annually elected executive officers should *rotate*, a certain number only being reëligible, enough, along with the Secretary and Treasurer, to transmit to successive Boards the history and spirit of past proceedings, so as to guard against inconsistency and to secure the execution, in good faith, of measures already projected and proclaimed. And now that we are on this subject we may venture farther to express, as far as we may presume to have an impression, that no President or officer of any Agricultural Society, especially those exercising any control over the appointment of Judges, should be a competitor for its prizes that year. True, it may be supposed that those who are such conspicuous promoters of improvements in Agriculture as to be thought of for its highest offices, must be remarkable for their excellence in many of its departments. But that by no means follows, nor is it essential, as to the Presidency. Men may be zealous friends and most efficient stimulators and promoters of practical meliorations in Agriculture, and exemplary Presidents of such Societies, and yet in



the field be very bad farmers. Such was Mr. Jefferson—such Judge Peters—the worst of all farmers, and yet they did more for the Cause than a thousand mere winners of prizes for fat hogs and big crops. Moreover, though the office should warrant the presumption of excellence, it yet more certainly should warrant an absence of all care about petty prizes, at least, for that particular occasion.

On the point of selecting Judges, for practical knowledge, impartiality and zeal, too much care cannot be exercised if we would maintain public confidence unimpaired. The following, which seems to us to be a judicious regulation, was lately adopted unanimously by a distinguished Agricultural Society in England—if it be not evidence of bad judgment as well as taste, to refer any longer to *anything English*; but this, at least, is a case not liable to the influence of Government or climate. On the score of *politics*, there is this to be said against it: it *was* moved, as we now see, by a *Lord*! But some of the most zealous and powerful friends of agricultural advancement, within our observation of thirty years, have been great Lords, and great scholars, and great statesmen, and officers of the Navy. Some of these days we will give a list of them.

**APPOINTMENT OF JUDGES.**—On the motion of Lord Portman, seconded by Mr. Shelley, the following Resolution was carried unanimously: "That any member of the Society who nominates a Judge be requested to certify that of his own personal knowledge he knows him to be qualified and willing to act as a Judge for whatever classes he may be proposed to be appointed; and who is unconnected with any exhibitor of stock or maker of implements, and has no direct personal interest in the stock exhibited as the breeder of any particular animals on which he might be called upon to adjudicate: That the list of names so proposed (stating by whom proposed) be, as heretofore, referred to the Committee of the Council, whereof the Stewards of the Year of the year preceding be ex-officio members: That in case a sufficient number of competent persons is not proposed, the Committee are ordered to add the names of such other persons as they may know to be competent and willing to act."

To proceed with the Annual Meeting at Albany:

*Four o'clock P. M.*—Mr. ANGEL, from the Committee appointed for the purpose, reported the following list of Officers for the ensuing year:

*For President*—LEWIS F. ALLEN, of Erie.

*Vice-Presidents*—1st District, AMBROSE STEVENS; 2d, JOHN A. KING, of Queens; 3d, E. P. PRENTICE, of Albany; 4th, SAMUEL CHEEVER, of Saratoga; 5th, GEORGE GEDDES, of Onondaga; 6th, GEORGE W. BUCK, of Chemung; 7th, ALLEN AYRAULT, of Livingston; 8th, JAMES C. FERRIS, of Wyoming.

*Recording Secretary*—BENJAMIN P. JOHNSON, of Albany.

*Corresponding Secretary*—EBENEZER EMMONS, of Albany.

*Treasurer*—JOHN MCD. MCINTYRE, of Albany.

*Executive Committee*—LUTHER TUCKER, of Albany; JOHN J. VIELE, of Rensselaer; JOEL RATHBONE, of Albany; JOHN T. BUSH, of Erie; THEODORE C. PETERS, of Genesee.

The Committee also recommended, unanimously, that BUFFALO be the place for holding the next Annual Fair.

The Report was accepted, and the persons named elected.—Adjourned to 7 o'clock P. M.

At 7 o'clock P. M. the Society convened at the Assembly Chamber to hear an Address by Prof. J. P. NORTON, of Yale College. Mr. N. gave an admirable exposition of the connection of Science with practical Agriculture. His illustrations were numerous, and of so plain and simple a character as to be at once understood. He was listened to for upward of an hour by a very large audience, whose satisfaction was evinced by the most profound attention.

On motion of Mr. J. A. KING, it was *Resolved*, That the thanks of this Society be presented to Prof. NORTON for his able and scientific Address, and that he be requested to furnish a copy of it for publication.

The preceding, as well as what follows, we take from that excellent old friend of the farmer, the *Albany Cultivator*—reserving for our next, some addition to these hasty remarks. In the mean time, we cannot but wish we could command the potential voices of this State Society, and that of our worthy colleague above mentioned, to demand from Government, for *agricultural* instruction throughout the Union, even *one* out of the *many millions* which the landed interest now pays for instruction and preparation for *War*. If, say men in authority, their own organs are dumb, are we not bound to infer indifference? If, say the farmers,

our own Press is silent, can we expect that of other classes to proclaim our rights? For one, while we can hold a pen, humble and powerless though it be, as long as one dollar is given to sharpen the Sword, we will demand another to brighten the course of the Plow.

At 7 o'clock P. M. the Society again convened at the Assembly Chamber, when Mr. JOHNSON, the Secretary, read the following abstract of the Reports of the Committees to award Premiums, as follows:

*On Farms*—1. John Delafield, Oakland, Seneca Co., \$50. 2. Peter Crispel, Jr., Hurley, Ulster Co., \$30. 3. James Pendil, Batavia, Genesee Co., \$20. 4. Lucas V. V. Schuyler, Watervliet, set Transactions.

*Draining*—H. D. Spoor, Troy, \$10. E. J. Woolsey, Long Island, set Transactions. E. C. Bliss, Westfield, Chautauque, Transactions 1846.

*Farm Buildings*—Dwelling—Mrs. Sanford Howard, Albany, \$20. Piggery—S. W. Jewett, Weybridge, Vt., \$10.

*Cheese Dairies*—Alonzo L. Fish, Cedarville, Herkimer Co., Statement of Experiments, &c., \$50. Newberry Bronson, Warsaw, Wyoming Co., \$20.

*Butter Dairies*—B. A. Hall, New-Lebanon, Columbia, \$50.

*Field Crops*—Spring Wheat—2. Robert Eells, Westmoreland, Oneida Co., 20½ bushels per acre, \$8. Indian Corn—George Vail, Troy, 67 bushels per acre, \$20. Barley—Benj. Enos, De Ruyter, Madison Co., 39 bushels per acre, \$10. Oats—1. Charles W. Eells, Kirkland, Oneida Co., 86 bushels per acre, \$10. 2. Benjamin Enos, De Ruyter, 71 bushels per acre, \$8. Beans—E. C. Bliss, Westfield, 31½ bushels per acre, \$8. Flax—Wm. Newcomb, Pittstown, Rensselaer Co., \$5. E. C. Bliss, Westfield, Transactions.

*Root Crops*—Potatoes—1. Daniel Newcomb, Pittstown, Rensselaer Co., 405 bushels per acre, \$10. 2. Martin Springer, Brunswick, Rensselaer Co., 369 bushels per acre, \$8. Ruta-bagas—1. Joseph Hastings, Brunswick, Rensselaer Co., 1,317 bushels per acre, \$10. Carrots—1. Wm. Risley, Fredonia, Chautauque Co., 557 bushels on half an acre, \$8.

*Experiments*—W. D. Osborn, Port Byron, Cayuga Co., on 3 acres planted with corn, 1846, \$20. 1st acre manured with 10 cords barn-yard manure before corn—no manure on any part this year—Oats, 1847, 90½ bushels per acre. 2d acre, 1846, Corn, without manure—Oats, 1847, 88½ bushels per acre. 3d acre manured with 8 cords of manure and 4 loads of muck, 1846—Oats, 1847, 112 bushels per acre.

*Fruits*—Charles Lee, Penn Yan, Yates Co., 2d premium for a seedling winter apple, "Waggener Apple," \$5 and Downing's common edition of "Fruits and Fruit-Trees."

After the reading of the above, the President of the Society, Mr. VAIL, delivered his Valedictory Address, which presented a flattering and encouraging view of the progress of the Society during past years, and of its prospects for the future. A unanimous vote of thanks was presented to Mr. Vail, and a copy of the Address solicited for the use of the Society.

On concluding his remarks, Mr. Vail introduced the President elect, Mr. ALLEN, who in a brief and appropriate speech, returned thanks to the Society, and signified his acceptance of the office.

Mr. BURCHARD offered some Resolutions in relation to the importance of Education to the farmer, and expressive of the advantage which would result by the establishment of Agricultural Schools in connection with Experimental Farms, which were unanimously adopted. The Society then adjourned.

*January 21.*—The Executive Committee met at the rooms of the Society at 10 o'clock—the President, L. F. ALLEN, Esq., in the Chair. Present, Messrs. Sherwood, Vail, Prentice, Johnson, Viele, Tucker, Stevens, Ayrault, King, McIntyre, Emmons, Rathbone, and several gentlemen from different parts of the State.

A Committee of gentlemen from Buffalo having given the usual guaranty that the expenses attendant on holding the next Annual Exhibition should be paid by the citizens of Buffalo, it was, on motion of Mr. Sherwood,

*Resolved.* That the next Fair and Cattle Show of the New-York State Agricultural Society be held at the City of Buffalo, on the 12th, 13th and 14th days of September next.

The Executive Committee were occupied during the day in the preparation of the Prize List, which we hope to be able to present, complete, to our readers next month.

How would it do, for the year that the State Society holds its exhibition in a County, to have its funds for that year added to those of the State, or go to help the town to pay expenses, and let one Show do for both?

May we trust that ex-President Vail's Address has demonstrated a steadily increasing average product in all the great staples from the cultivated lands of the State, since the formation of the New-York State Agricultural Society, of which this 26th of February, 1848, happens to be the *Fifty-sixth Anniversary!* In 1845 the average crops throughout the State were reported at—

Wheat.....14	Corn.....25	Beans.....10	Turnips..... 88
Rye..... 9½	Potatoes.....90	Barley.....16	Flax..... lbs. 100
Oats.....26	Peas.....15	Buckwheat.....14	

Can any one inform us what they were, probably, in 1796, and decennially since?

The question is a highly interesting one, and we shall owe thanks, in the name of the agricultural interest, to any one who will throw light on it. For ourselves, we strongly suspect that the late general act of incorporation, if not too much embarrassed and trammelled with vexatious and forbidding restrictions, will do more to augment the products of Agriculture in New-York, in the next twenty years, than all the Agricultural Societies and Institutes of the State have done in the last fifty. Why we think so, we shall explain hereafter. It is not by a hundred or a thousand paltry premiums, scattered here and there, that you can have rich and waste lands cleared, and ditched, and drained, and made to yield heavy crops. You must establish, in your public legislation, a policy that will draw the consumer to come and settle down alongside of the producer.

## SANDY-POINT FARM,

ON THE JAMES RIVER, VIRGINIA.

SEVERAL interesting sketches have appeared, particularly those from the pen of S. S. Griscom, of Moorestown, New-Jersey, setting forth the cheapness of land in the southern and eastern tide-water portions of Virginia, and their great improvability, with apparently very impartial and just remarks on their resources and natural advantages. Mr. Bolling's celebrated estate called Sandy Point has been particularly described. On the whole, it would seem to be the naked result of the grossest prejudice or downright ignorance, that carries people away from the conveniences, social comforts, proximity to market, and cheap lands, to be found in the old Atlantic States, to struggle with exposure and privation in our distant frontier settlements.

As to the *profits* of Agriculture in States as new even as Iowa, where Corn is the great staple, let the reader turn to an account of the profit and loss in that branch of Agriculture, as exhibited in another part of this number, taken from an agricultural journal on the spot, to show what is lost at corn making, when valued even at 25 cents a bushel. And yet, if our memory does not fail us (a thing, alas! too likely), we heard Mr. Clay say, last summer, that if always assured of 20 cents a bushel for corn, he would sooner make that crop at Ashland than any other, with a view to profit.

As to the *health* of the region referred to in Virginia, about which so much ill-founded prejudice exists, Mr. Griscom says: "I may remark here that, in the latter part of the 8th month (August), I found the people generally throughout this region in the enjoyment of health quite as good, and I think better, than in Burlington county, when I left home; and although every one agreed that the weather was more oppressive than it had been at any time previously during the summer, I did not find the mercury above 85°, and I was careful to observe the temperature. At home, in New-Jersey, at the same time, it was often above 90°."

As to *Sandy Point*, he says:

"It contains over 7,000 acres of land, of excellent neutral mulatto soil—considered, in the Essay on Calcareous Manures, as the best quality for agricultural purposes generally; it has a river front of near twelve miles; the river banks are high, with a beautiful, clean beach, and no marsh or wet land worth naming—affording many most beautiful situations for residences. The river is navigable for the largest ships, and a full mile in width, abounding in



fine fish, which can be taken all the year; and, in winter, wild geese, ducks, &c. are there in great numbers—in the forests, deer, wild turkeys and partridges are very plenty. Steam-boats pass daily up and down the river between Richmond and Petersburg, and Norfolk and Old Point, where they connect with the boats to Baltimore and the North, stopping at Sandy Point for passengers or produce. A person can leave this place about noon, and be in Richmond, Petersburg, Norfolk or Old Point the same afternoon, or in Baltimore by sunrise the next morning, and in Philadelphia five or six hours later. The winters are so short and so mild that cattle and sheep need very little fodder, the grass being scarcely checked in its growth; and plowing may go on the whole year almost without any interruption. Harvest comes and fruits ripen nearly a month earlier than in the vicinity of Philadelphia. Peaches and other fruits and vegetables may be sent to Philadelphia and New-York a whole month before they are ready in the vicinity of those cities. The markets for grain are as good there as anywhere in the Northern States.

About 2,700 acres are cultivated; all having been limed, and enormous crops of clover being turned under with every plowing for a crop, it is all in a very high condition. The wheat field the present year contained 910 acres; the crop was excellent, though much damaged by a remarkably late frost, and by cold and wet weather while in bloom. A very recent letter from the proprietor says: 'Thus far we have measured 13,500 bushels, and I do not despair of getting 20 bushels per acre.' He is extremely modest in his estimates, and, from the best information I could get while there, it will considerably exceed that quantity, and equal at least 20,000 bushels. 545 acres are in corn, which is estimated to average 30 bushels per acre. All the other land is in clover of most luxuriant growth, to be plowed in as a dressing for wheat—a very small portion being cut for the stock. The whole is most judiciously divided by roads, which are skillfully and nicely graded, and kept in the most perfect order. The buildings are numerous and excellent, and well distributed: large barns, with stabling for the stock, are located conveniently over the farm; the arrangement of the stables is admirable, and they are kept in the most perfect order; the manure is constantly removed, and the floors kept covered with gypsum, so that the ammonia is immediately absorbed and preserved in the very best way to be useful to the crops; and the manure is not suffered to lie in the yards, but is hauled out and spread over the clover, which immediately covers it, and appropriates all the nutriment. All the enormous quantities of straw are spread over the clover, soon find their way through it, and by covering and keeping it moist, soon decompose and assimilate themselves again with the soil, to aid in the production of another crop of wheat. Near the river bank, a short distance west of the mansion, is the spacious barn, with steam-engine to work a saw-mill for the use of the farm—a mill for grinding corn meal—a mill for grinding plaster—and threshing-machines, which are capable of getting out and cleaning 1,000 bushels of wheat or corn in a day. This was at work while I was there, and was one of the most gratifying exhibitions I ever witnessed—its average day's work was about 800 bushels, threshed and cleaned, and put into the bins; but I was told that, under the most favorable circumstances, over 1,000 bushels could be done. The immense field of 910 acres was harvested and secured in eight days, being put up in the field in large shocks."

Aware that Mr. Bolling, in a spirit corresponding with the great extent and productiveness of his estate, had introduced the use of improved machinery, and the agency of steam, in the preparation of his crops for market, inquiries were made which elicited the following letter.

Curiosity was felt to know particularly what had been the result of his experience in regard to the *machines for mowing wheat* by horse-power, and as to the generally apprehended *danger of fire* from the use of steam in such near proximity to the farm buildings.

There need be no better proof of the inertness of agriculturists and of those who represent them in Societies, and Institutes, and Legislatures, than in the little which this great labor-saving power has yet been made to do for the landed interest; while for commerce, manufactures, and war, it saves the labor and the cost of millions. Large premiums ought to be offered by the American Institute and the New-York State Agricultural Society, to ingenious mechanics, for any new and economical *application of steam to agricultural purposes*. Were that done, we have no doubt that, before many years, we should have steam in common use all over the country—digging, plowing, ditching, sawing, felling timber, and performing for the farmer as much as it now does for the merchant and the manufacturer. Among other items of recent agricultural intelligence, a French

paper, "La Semaines," announces the invention of a steam-plow—or, rather, a mode of digging by means of steam—from which the most wonderful results are anticipated. The inventor is a young medical man, named Barat. The journal states that "one of two-horse power was in operation at the residence of the maker, who was constructing another of double that power. The machine proceeds along the field, and digs the ground with the greatest precision. Two beams, furnished with five mattocks each, act successively upon the soil, loosening it to the depth of 12 or 15 inches, and pounding it as small as compost. By using only one of the beams, a tillage of the usual depth can be effected."

Now suppose a discovery equally auspicious for manufacturers or for warlike purposes were announced, how long would it be before we should have it in use? and, since our Government disclaims all power to do anything special for Agriculture—on which, if on anything, depends the "general welfare"—why do not Associations which, under national and popular names, seek popular support, establish efficient arrangements under which, by our Ministers or Consuls, or their own agents, they should be immediately apprised of all such discoveries, with the means of introducing them for the benefit of our country?

We have pleasure in submitting Mr. Bolling's obliging reply to our inquiries, but first take room to add what Mr. Griscom says of one of our most beneficent, but *peaceful*, and therefore hardly remembered benefactors:

"One of the most gratifying incidents of my life was a visit to Beechwood, at Coggins's Point, in Prince George, the residence of Edmund Ruffin, Jr., to meet there his father, the author of the 'Essay on Calcareous Manures,' &c., late Editor of the 'Farmer's Register,'—works which will insure him the gratitude and veneration of every enlightened agriculturist, as long as works on Agriculture remain to be read. To ride and walk with him over the scenes of his early and successful experiments—to visit with him the very marl banks from which his first experiments were made—and to listen to his remarks and observations, the result of so many years of the most persevering and indefatigable labor and study—was indeed most gratifying and instructive. Here the inquirer after a knowledge of the action of calcareous manures on soils may have all demonstrated to his satisfaction; and if he will see, can no longer doubt the capacity of the soil of this region for the highest productiveness, by a judicious application of means which are abundantly supplied in almost every farm in this region."

Yes, doubtless his writings and his practical illustrations have added hundreds of thousands to the income of Agriculture and to the value of landed property in Virginia; but what does the writer suppose would be done to evince their gratitude and veneration for Mr. Ruffin, by those who are sent to represent the landed interest of Virginia in her Legislature? Does he suppose, were he to present himself in Richmond, they would rise in one body to receive *him*, and gratefully acknowledge *his* visit as an honor to the State? Not they! *His* has been but a plain, bloodless display of extraordinary zeal and intelligence, in showing men how they may retrieve their exhausted estates, and rear their families in greater comfort and respectability. *He* has never volunteered to take a life commission, with two or three thousand dollars a year, to go two or three thousand miles to carry death and destruction to the firesides of an ignorant and besotted neighboring people, who wish to be free without knowing how. Our *landed* representatives, of all parties, will tax the people hundreds of millions for war, but dare not demand one dollar for agricultural instruction.

#### LETTER FROM R. B. BOLLING, ESQ.

HUSSEY'S AND McCORMICK'S MOWING-MACHINES—STEAM-MACHINE FOR CLEANING WHEAT—PRODUCE OF VIRGINIA LANDS.

SANDY POINT, Charles City County, Va., Dec. 11, 1847.

*My Dear Sir:* Your favor of the 3d was forwarded to and received by me here a few days ago. Feeling the importance, largely engaged as I am in ag-

ricultural pursuits, of labor-saving machines, and especially of wheat-reapers, (wheat, as you know, being one of the two great staples of the lower James, and corn the other,) I embraced the earliest opportunity to make trial of both Hussey's, of Baltimore, and McCormick's, of Virginia. The latter, after a trial, to me satisfactory, made in the presence and with the aid of a vender, I condemned and rejected. The former I was induced to buy, now four or five years ago, regarding it as superior to the McCormick, though very far from being an efficient machine, and without farther and very great improvements, it cannot supersede, on our large farms, where laborers can be had, the cradles. My last was the largest crop I ever reaped, and the season the driest, coolest and most favorable for the use of the reaper, yet with one of Hussey's machines, equal to any I have seen, (though he may have made *recent* and I trust valuable improvements,) in my barn, I was induced to use it for a few hours only, to gratify a practical mechanic of your city, by name Ransom Smith, a clock manufacturer and a man of great mechanical skill and taste, who happened here, to whom I would refer you. While I am as yet without an approved and efficient reaper—which, propelled by steam or some other power than horse, I regard as the great desideratum (if attainable) on the valuable and extensive farms on the lower James River especially—I have successfully and most satisfactorily introduced in my barn a steam-engine of fifteen horse power only, by which I thresh, chaff and clean, ready for delivery, my wheat, employing scarcely any manual labor, beyond the feeder and one or two hands to attend to the straw as it passes from the rakers over revolving drums upon a network of common cord to the point—150 feet from the barn—where the straw is received, for the *first time*, by hand, and put in long ricks, where it is preserved, until it is finally hauled, as provender and litter for various kinds of stock, and as covering or top-dressing for the young clover—in which mode much the largest quantity is annually used with the *most marked and gratifying results*. Besides threshing my wheat and cleaning and conveying it by *elevators*, as in a merchant-mill, from the basement to the garret, as often as it may be necessary, to cleanse it from impurities, or in case of a wet season (which very often occurs) during harvest, or before the wheat can be housed, to keep it in motion and prevent it from *heating*, the engine drives my corn-sheller, and at the same time the fans, which prepare the corn for shipment, together with one pair of 4½-foot stones, by which I am supplied with meal for my domestic uses, an upright saw, (a circular would be better,) a pair of 4-foot stones to grind plaster, and a pair of crushers or stampers for the preparation of bone-dust, with which I am now making experiments (if, indeed, the use of bone-dust can any longer be regarded as an experiment) upon wheat, turnips, &c. All these various and important operations are, in turn, economically performed in the same building, and, with the *exception* of the mere *threshing* of the wheat, can as well be performed in wet and inclement weather, as in dry and mild. Without this silent, potent and economical agent, which I trust will soon be as common in this as it is in the old country among agriculturists, I should not be enabled to grow the crops which by its aid (indirectly) I not only raise but clean. While others, in July, are threshing with *their* teams, I am enabled to employ *mine* in the indispensable and all-important work of fallowing my clover fields for a succeeding wheat crop, and am in this way only enabled to give the necessary and *timely* preparation to a large surface, on which to sow my seed. My engine-room is in immediate contact with my barn, which has a brick gable only, though the engine-room is wholly of brick, and fire-proof. Few sparks are emitted, from the construction of the chimney, and these few so light as to lose all power of doing mischief, even were they to come in contact with the straw, which is conveyed to a remote point, and in a different direction. Many here, like yourself, expressed fears as to fire, but an inspection has never yet failed to remove them.

I have hastily, though I trust intelligibly responded to your two inquiries respecting, first, the wheat-reapers, and then the use of steam, in many of my agricultural operations.

I learn from you with more regret even than surprise, as great as it was, that your subscription in Virginia did not average a subscriber or more to each county.\*

[\* No; not more, probably, than 100 in the whole State; although we have proffered them the most voluminous, profound and highly illustrated works for less than one-quarter of their prime cost. We had (862)



To me it is a source of inexpressible mortification and regret to see the great interest of Agriculture in this highly favored State so little appreciated by her citizens. Blessed with a soil and climate equaled by few States in the Confederacy, and certainly surpassed by none, and abounding, in almost every point, with that invaluable, and indispensable, and wonder-working agent, carbonate of lime, in some one of its forms, Virginia ought to rank among the foremost of her sisters in the various productions so well adapted to her soil and geographical position. Were the *same* means employed, and industry and zeal displayed here, that I witnessed this summer in a delightful trip to the States of Delaware, New-Jersey, Pennsylvania, New-York, Connecticut and Massachusetts, I feel assured, from my own results, that we should be much more bountifully rewarded for our expenditure of time and money; and this opinion I express with much confidence, after having enjoyed the opportunity this summer at the State Fair, at Saratoga, of conversing with many intelligent farmers, and comparing notes. None there with whom I had the privilege of conversing, were enabled to report a yield of 31 bushels average of wheat upon 160 acres, after clover fallow. Yet Mr. Hill Carter, of Shirley, made that quantity upon his field of that size in 1845. In Pennsylvania, and in beautiful and fertile Chester and Delaware Counties, 20 bushels per acre, upon ten or twenty-acre lots, were regarded as their maximum crops. Mr. Wm. Harrison of Brandon, and Mr. John Selden of Westover, often exceed that yield upon fields of from 100 to 200 acres. I this past season averaged 23 bushels on 500 acres. Could we increase the readers of our excellent agricultural journals—and no one feels a greater desire to aid in the effort than myself—we should soon witness gratifying and beneficial changes among our farmers. With the sincerest wishes for the universal dissemination of your journal among us and others,

I am, dear Sir, very respectfully,

ROBERT B. BOLLING.

[There are few subjects on which erroneous impressions are more prevalent than as to the comparative condition and produce of farms in the North and in the South—say New-York and Virginia, for instance. The common impression south of the Chesapeake is that twenty bushels and upward of wheat to the acre, are ordinary yields in New-York; whereas, by her last Census, taken with something like care by the State officers under State legislation, in 1845, only *one* county averaged twenty bushels; and that county (New-York) had—or so reported—but three acres in that grain. Out of 59 counties, only ten averaged over fifteen bushels, and the whole State fourteen of wheat, twenty-six of oats, nine and a half of rye, and twenty-five of corn. We much doubt if in New-York, or Pennsylvania, there can be found, on the same scale, any exhibition of Agriculture that evinces more thorough judgment and forecast, on the part of the proprietors, or equal perfection, neatness, and thorough work, in the execution and detail of practice in the field, than may be witnessed on the large estates referred to in the above papers. Why does not the Virginia Legislature provide for exact periodical returns, decennially, at least, of all her agricultural statistics. Would not the time and money be as well spent as in some other ways that might be mentioned? And how can wise and just laws be enacted without such periodical and accurate returns?

*Ed. Farm. Lib.]*

**SMUT IN WHEAT.**—N. Simons, of Castile, New-York, states in the *Genesee Farmer* that he took six fine heads of wheat, and three of them he rubbed out and sowed with as many heads of smut. The product was two-thirds smut, as was found by counting the heads in the crop. The other three heads were sown on a clean place remote from the others; not a particle of smut was produced. This experiment entirely accords in the result with others, showing conclusively the importance of clean seed.

supposed there were counties that would, and still believe there are single counties in Virginia that ought to give more patrons for such a work than it has received in the whole State. Of course we don't speak of the Editorial portion of it.

*Ed. Farm. Lib.]*

## THE POTATO ROT.

"Rot me," as the boy says, if—after giving what follows, from the London Gardeners' Chronicle—we trouble the reader with anything farther on this subject for a twelvemonth to come—unless either Professor Norton, Mr. Teschemacher, of Boston, or Professor Lindley himself, should aver that something new and of practical utility, to be relied on, has come to light:

Dr. Buckland's letter on the Potato Disease, together with those of Mr. Wilkinson and Sir Gaspard le Marchant, has revived the vexed question of how the disaster was produced. It reminds us of stories current in Ireland in October and November, 1845, when it was firmly believed by many persons, that the mischief was produced by lightning. There was one case in particular of a field sloping to the sea-shore, on the north-east coast, the whole of which was blighted in a night, and fishermen who were lying off the coast that night declared that the surface of the field seemed light with gleams and coruscations.

We are far from venturing to assert that some peculiar electric condition of the atmosphere has been the real cause of this scourge; but we are equally far from denying it. We think, too, that evidence of the disease being connected with some peculiar atmospheric condition of a deleterious nature, acquires more and more force as time wears on, while at the same time the arguments to the contrary become weaker and weaker. The peculiar affection of the tomato in 1846, which, as far as we saw, was confined to the side of the fruit freely exposed to view, and consequently to direct atmospheric influence, seems to corroborate the views of Dr. Buckland and Mr. Milne.

At all events it appears certain that unless this visitation is removed by Providence, it is not likely to disappear; for the skill of Man has been directed in vain, not merely to its removal, but even to its mitigation. If it proved to be last year less destructive than in 1845 and 1846, the change can hardly be referred to any human cause. Time has now permitted a trial of the various remedies which have from time to time been proposed in different countries, and the result is that all, without a single exception, have failed.

The most complete series of experiments hitherto made public is that tried last year in the Garden of the Horticultural Society, and reported upon in the Society's "Journal," just published. In the absence of a clue to the first cause of the disease, experiments are necessarily empirical; and therefore every kind of remedy, probable or improbable, which had been heard of, was put to the test, from charcoal up to soap jelly. The results must, we imagine, show the hopelessness of dealing with an enemy so capricious in its attacks that a result obtained in one place is directly reversed in another place only a yard or two off—there being no appreciable difference in soil or situation or circumstance. For example, the percentage of diseased potatoes found where *nothing* had been used in the soil was as high as 32·50 and as low as 5·74. And although in the cases of some applications no disease whatever was found when the crop was taken up—nevertheless in many instances the very same applications were found connected with above 50 per cent. of disease. The following Tables, abridged from Mr. Thompson's Report, will make this still clearer:

Substances employed.	Rate per cent. diseased.	Substances employed.	Rate per cent. diseased.
1. Lime and charcoal.....	13·24	17. Salt, potash, and fat.....	12·17
2. Do. do. ....	20·66	18. Sulphuric acid, diluted (half row) ....	5·19
3. Do. do. ....	18·24	19. Powdered charcoal (half row).....	7·73
Average of the above three rows.....	17·38	20. Salt .....	3·86
4. Nothing .....	20·88	21. Coal-tar sprinkled over the sets .....	3·70
5. Do. ....	29·40	22. Nothing .....	6·65
6. Do. ....	21·92	23. Chalk, salt and charcoal.....	4·45
Average of the above three rows .....	24·06	24. Do. do. ....	6·89
7. Salt, lime and charcoal .....	31·05	Average of the above two rows .....	5·67
8. Do. do. ....	22·81	25. Sulphate of soda and nitrate of soda ..	14·64
9. Do. do. ....	13·77	26. Salt successively applied .....	6·44
Average of the above three rows ..	22·54	27. Do. do. ....	7·50
10. Nothing .....	23·00	Average of the above two rows .....	6·97
11. Ash-leaved kidney, young tubers grown		28. Sulphur.....	6·63
12. in 1837 planted.....	24·00	29. Salt and sulphate of magnesia.....	9·38
13. Nothing .....	8·50	30. Do. do. ....	7·36
14. Watered with weak chloride of lime ..	17·52	Average of the above two rows.....	8·37
15. Do. do .....	19·28	31. Moberly's sulphate of magnesia .....	12·26
16. Nothing.....	32·50	32. Sets dipped in lime .....	7·70

<i>Substances employed.</i>	<i>Rate per cent. diseased.</i>	<i>Substances employed.</i>	<i>Rate per cent. diseased.</i>
33. Sets sprinkled with quicklime .....	17-27	45. Nothing (half row) .....	5-74
34. Soot .....	16-21	46. Powdered oil-cake (half row) .....	3-48
35. Oil-cake (half row) .....	9-23	47. Nothing (half row) .....	8-30
36. Nothing (half row) .....	11-52	48. Shaded by Indian corn .....	14-12
37. Powdered charcoal (half row) .....	12-43	Average of all the rows to which nothing was applied .....	18-11
38. Nothing (half row) .....	14-71	49. Potash, salt, fat and water .....	53-93
39. Sets dipped in boiling water .....	7-39	50. Do. do. ....	1-38
40. Sets dipped in lime and dung-water .....	11-90	51. Do. do. ....	0-0
41. Do. do. ....	15-02	52. Sulphuric acid .....	0 to 12-98
42. Do. do. ....	8-94	53. Sulphate of magnesia .....	0 to 4-19
43. Planted alternately with beans .....	11-90	54. Chloride of lime .....	0-23 to 4-27
44. Crushed oil-seed (half row) .....	10-51		

In some cases where sulphuric acid was used the disease disappeared, but the crop was nearly destroyed.

The most remarkable result was that of the application of a soap jelly, a mixture of potash, fat, salt and water, an American remedy. When applied to plants set whole in hills, layered and earthed up repeatedly, the potatoes treated with this mixture were in some cases free from disease, but in other cases the per centage of tainted tubers amounted to as much as 24-44, and when they were not earthed up to even 53-03, or to an average of 21-32 in 30 experiments. It is therefore a question whether the advantage which in some cases appeared to belong to the soap jelly was not in reality attributable to the mode of treatment.

Seedlings, concerning which so much obviously unfounded expectation was entertained, proved no more exempt from disease than old and long-cultivated varieties, as is shown in the following Table :

<i>Rate per cent. diseased.</i>	<i>Rate per cent. diseased.</i>
1. German seed from Baden, sown in gentle heat April 3; planted out April 30 .....	9-64
2. Ditto .....	15-84
3. Seed from Mussooree, sown in the open ground, March 18 .....	25-00
4. Seed from Mussooree, sown in gentle heat April 3; planted out April 30 .....	18-42
5. Seed from Poland, sown in gentle heat May 24; planted out June 16 .....	13-94
6. Seed from Poland, sown in the open ground, May 24 .....	47-36
7. Ditto .....	72-82
8. Ditto .....	47-01
9. Seed from Maldon, Essex, sown in the open ground, March 18 .....	29-44

Neither did the wild potato escape; on the contrary, a perfectly wild form of the root, fresh from its native mountains, is reported to have "exhibited the characteristic blotches in a worse degree than any other sort in the garden." In short, the conclusion which has been arrived at from the Horticultural Society's experiments is "that there is no known preventive of the disease; that neither renewal by seed, nor introduction from foreign countries, nor treatment in the earth, afford any guaranty against its attacks; and that its progress cannot, in the present state of our knowledge, be resisted with such success as to justify the recommendation to the public of any of the remedies hitherto proposed."

These facts surely point more strongly than any argument to the impolicy of encouraging the cultivation of the potato, except as an aid to human subsistence, along with other and more hardy varieties of food. Its very productiveness when healthy evidently leads to the most awful social calamities in the event of failure; and if the cultivation of the plant is persevered in, Europe can expect no respite from those dreadful visitations which we are told by the very able and well-informed author of the "Irish Crisis," in the Edinburgh Review, has produced no fewer than seven partial or general famines in Ireland during 26 years, viz., in 1822, 1835-6-7-9, and 1845-6, or one in every three or four years. If the richest country in the world would sink under such a series of disasters, what must be the inevitable condition of the poorest?

We repeat, then, that the cultivation of the potato, by the poor, for their main subsistence, should be discouraged in all possible ways; and that, on the other hand, the encouragement of other articles of food should be the first and most serious object of all humane persons throughout the United Kingdom; for there is not the slightest security that the present disease, when it shall have disappeared, will not be succeeded by one quite as formidable.

[We may thank Providence that with our Indian corn there is no danger that roots should ever be the basis of popular subsistence in our country. How dreadful would it be to have the whole nation, as in Ireland, live in habitual and constant dependence on such a diet, with nothing to fall back upon in case of disease and scarcity. But even that is not all. It is impossible for a nation that looks, for its subsistence, to one such single and simple culture and preparation, of its food to advance in civilization and the arts. The main impulse that



prompts physical and intellectual exertion and improvement is that feeling which arises between the satisfaction and the renewal of hunger—and where the animal wants are so easily satiated as in Ireland, by digging and throwing into the pot a small measure of roots, there will be, among agriculturists, comparatively no intellectual progress. Variety and refinements in the processes and variety in the staples of Agriculture, and Horticulture, and cookery, and progressive civilization march on together. Leave a nation with redundant crops of Irish potatoes as the great element of subsistence, and cut them off from intercourse with more refined people, and they would sink into barbarism and go naked, if the climate would allow. There are, says a writer in a late magazine, thousands of Irish families in whose cabins now the only furniture is, a pot to boil the potatoes, and the door taken off the hinges and laid across the bottom of an inverted wicker-basket for a table. Long, then, may we have the *murphies* as a luxury, but never as a necessary of life. We would sooner see them become extinct.

*Ed. Farm. Lib.]*

---

## HOUSEWIFE'S DEPARTMENT.

---

### GARDENER'S CALENDAR FOR MARCH.

WE copy, by permission, the following from "Landreth's Rural Register and Almanac," published by Lea & Blanchard. David Landreth has, it seems, succeeded to the management of the old establishment, founded by his predecessors, (of whom his father was the principal,) more than half a century ago, and, as is stated, "with the determination to sell nothing but what they fully believed was worthy of credit; and that they might the more certainly accomplish their object, determined to produce, as far as possible, the seeds which they should vend; experience having shown them that most imported seeds could not be relied on, and much less those casually collected, and sold to dealers.—The result was as they had foreseen:—unlimited public confidence. The concern thus conducted, has been gradually enlarged, and is now, as it has been for many years, the most extensive of its kind in America; supplying not only much of the demand in the Middle, Western and Southern States, but exporting to the West Indies, South America, and the British Possessions in Asia."

Personal acquaintance with the proprietors, successively, justifies the expression of our highest confidence in the practical experience and sound integrity with which this respectable concern is conducted; and it needs no argument to show that the public interest is always to be promoted by the continued support of such establishments, (got up at great expense and many years of labor,) when they are found to be managed with skill, integrity, and fairness as to prices. On the other hand, dishonest seedsmen are to be accounted and stigmatized as among the most mischievous of all impostors.

Some readers may be surprised to see this subject introduced under the *Housewife's Department*; thinking it more properly belongs to the husband's; but those who are familiar, as we profess to be, somewhat, with rural life, and the habits that characterize it, must know that, were it not for the wife, the *garden*, no less than the poultry-yard and the dairy, would, in most cases, be most sadly neglected. Nor, in fact, while we yield to none in reverence for the character

and position of the judicious and sensible Housewife, do we see anything unseemly or incompatible in her possessing that knowledge of Horticulture, and of the practical management of the Garden, and Nursery, and Orchard, which are all indispensable to a good supply and regular succession of vegetables and berries and fruits for her table. Too often does it occur by the death, and, alas! sometimes by the indolence or worse habits of another, that much coarser and more onerous duties than those which belong to the dairy and the garden, devolve on the widow or the wife. On this ground, a knowledge of what belongs to these departments may well be coveted and aimed at by every well-bred woman of good sense, while personal attention to them may be safely recommended, were it only on the ground of their tendency to promote health, by that exercise in the open air which their performance superinduces; and no less on the score of that mental expansion and improvement which may be expected to follow when these duties are pursued with some attention to the principles and the laws of Nature, that belong to and regulate the growth of peas and strawberries, and the manufacture of bread and of butter, no less than the revolution of the Earth, the ebb and flow of the tides, and the motion of the heavenly bodies.

The difficulty that most frequently stands in the way of an adequate supply of butter, and poultry, and vegetables, and fruits, and the want of which should be esteemed disreputable in every country establishment, is not so much that the Housewife is either too indolent or too proud to give to such matters her personal attention—though truth compels the acknowledgment that such is *sometimes* the case—but it much more frequently results from unwillingness and failure in *another quarter*, to supply the means and the help that are indispensable.

It is a maxim among all men of sense, that whatever is worth keeping is worthy of being well kept; and in no case is this more emphatically true than in respect of all that belongs to the *Housewife's Department*. No more can blood be got out of a turnip, than chickens from hens, or butter from cows, or vegetables from gardens, or fruit from orchards, where little or no provision is made for feeding them—no houses or fences for their shelter and protection, and no force supplied for their cultivation and management. What say you, dear Madam? We almost fancy we hear you answer, as Sammy Veller says, “them’s my sentiments.”

Well, with the blessing of Providence, as long as we can hold a pen, and enjoy the honorable privilege of giving counsel in what concerns your Department, we will stand up for its dignity, its importance, and its title to respect and support; and yet more, because even yet more important, it shall be our pleasure, as it is our duty, to throw into the columns appropriated to your particular use, what may appear to us best adapted to qualify you for, and give you “aid and comfort” in the discharge of that highest of all human functions—the *office of Mother!*

**GARDEN CALENDAR—MARCH.**—If the spring be forward there is a busy scene: ground is to be dug for the early sown crops; roots, shrubs and fruit-trees are transplanted, running vines are shortened and secured to their supporters, walks newly graveled, or covered with tan, edgings reset. Peas are sown. Potatoes for the early crop planted. Windsor and long-pod beans planted; a few early radishes and beets sown on a warm border. Cabbage and lettuce plants from the autumn sowing are set out. Cauliflowers may be set out, if you are provided with boxes to protect them. Asparagus seed sown and beds may be made. A small sowing of early turnip may be made. The hot-beds will now require more water, air is indispensable; if kept too close the plants will be *drawn* and unable to bear transplanting.

This and the succeeding month are favorable for transplanting fruit-trees. If the reader have occasion to purchase, let us caution him against doing so from any but a responsible nurseryman:

above all, avoid *auction trees*: the most worthless in the nursery are frequently selected for those sales, and with attractive names sent to some distant point, where the purchaser cannot have redress when the deception practiced on him is made evident—which, perhaps, is not until after years of careful culture.

Another important matter connected with this subject, is the method in which the trees are planted. Let it be done deliberately and with care. If the ground in which you are about to plant be of an indifferent quality, provide a liberal quantity of rich earth for each tree, and cast aside that which is taken out of the holes. For an ordinary sized nursery tree, the holes should be four or five feet across, and nearly as many deep; the excess in depth to be filled up with good earth provided for that purpose; when all is ready place the tree in the center of the hole, with the roots and fibres spread out horizontally or fan-shaped, and as the finely pulverized earth is shoveled in, shake the tree gently to admit the earth among the fibres. When the hole is filled up to the proper level, the tree should not stand more than a couple of inches deeper than it did before removal, which can be readily determined by the color of the bark. A stout stake to keep the tree steady is highly useful, and if the ensuing warm weather be dry, give a little water from time to time—or what is even better, protect the surface of the ground for a few feet around the tree with litter, or any other material which will give shade and arrest evaporation.

In the Carolinas and farther south, continue to plant peas and beans, transplant the remaining cabbage-plants from winter beds; remember that to have fine head cabbage or lettuce, very rich land is requisite. Sow onions and leeks. Sow a few turnips, they may succeed. Plant potatoes. Sow carrots and parsnips, if enough were not sown last month. Radishes may be sown from time to time throughout this month. Sow small salading, such as mustard, cress, curled lettuce, at least once a fortnight. Sow parsley, if not enough. Sow tomatoes in a warm situation; the tomato-plants from the hot-bed may be set out. Sow peppers close of the month. Plant water and citron melons. Plant cucumbers. Okra may now be planted, also squash and pumpkin-seed. Beets and other root-crops sown last month will be advancing; they should be thinned and cultivated. Sow celery, spinach, fork or dress asparagus-beds, if not already done—set out strawberry-beds. Artichokes, if not slipped and dressed last month, should be farther attended to. Hoe and thin the turnips which were sown last month. Potatoes will now be coming forward; they should be kept clean and earthed up. Weeds will now make their appearance—an early application of the hoe will save much labor.

GREEN-HOUSE AND FLOWER-GARDEN CALENDAR.—MARCH.—*Vinery*, keep a high, moist temperature, and syringe frequently. *Geraniums* water freely; give them an airy situation, and as near the glass as possible, to prevent *drawing*. *Hyacinths*, *tulips* and *crocus*, continue to water freely, and tie the flower-stems to neat stakes—*azaleas* begin forcing; increase the supply of water and air generally, fumigate frequently to destroy the green fly. *Annuals* sow in hot-beds.—Prune out-of-door *Roses*. *Lagerstrœmeæ* head down to four or five eyes, and give them an airy situation.

If any can be found at this day to doubt the great importance of having the female mind better stored with useful knowledge, let him reflect for a moment on their increasing agency in the great work of education, and his doubts must cease.

In Massachusetts, where the subject of Education is best understood and most efficiently provided for, the proportion of female over male teachers has been for the last ten years constantly increasing, until now the number of female teachers, we believe, more than doubles that of males, there being more than 5,000 of the former so employed; and as to their fitness for the task, it would be superfluous to add to the opinion of the distinguished Secretary to their Board of Education, who says on this point that he is well satisfied that the gain to the children in mind and manners, under female instructors, has been in full proportion to the economy that attends it.

We should do injustice to our own feelings, not to say of Mr. Mann, in this connection, that in any community having a just conception of the *true* sources of civilization and social happiness, his services in the cause of Education entitle him to stand in the front rank of public benefactors; and yet were he in the greatest extremity of need, it may be doubted whether Congress would give him a soldier's patent for a quarter section of land. Such is the wise and accurate discrimination of the rulers of a Republican land. Even these female teachers, whose labors are devoted to the instruction of the rising generation in the principles of knowledge and virtue, get but \$13 50 per month, and find themselves; while a common hireling in the trade of human slaughter gets his board and clothes and \$10 a month, and a farm of 160 acres of land, picked out of as many millions.



For this department we have chosen, for variety, the following short moral tale, that too nearly corresponds—oftener than many know of—with what is every day taking place in real life.

MARY WILLIAMS.—A TALE.

IN the neighborhood of a small town in the south of England there came to dwell, some years ago, a young mother, whose family consisted of a boy six years old, and a lovely little girl three years younger. She was a stranger to the inhabitants; and there was about her something of mystery, which the uncharitable interpreted to her disadvantage, and which prevented even the kindly from warmly interesting themselves in her fortune. Her name was Mary Williams.

Mary Williams lived for some time unknown and unnoticed. She intimated her wish to maintain her family by receiving the children of her neighbors to instruct in the rudiments of education and in their Christian duties: but no pupils presented themselves. She desired to be employed as a seamstress; but no work was offered her. Mary saw her little savings visibly declining; she sometimes looked upon her children with a sad foreboding, and wiped the secret and unbidden tear from her sunken eye.

The inmates of the cottages which surrounded her little dwelling were excessively curious to know the history of Mary Williams. She was seldom seen in the daytime, for she was employed in instructing her little boy, who was docile and industrious; or she was endeavoring to conceal the approaches of poverty by additional care in the preservation of their garments. She and her children were still ever neat and clean. But on a summer evening she sat in the garden in front of her door, and listening to the prattle of her loved ones, endeavored to forget the cares which had removed the bloom from her cheek. It was at this hour of repose that the gossips would sometimes come around her. Their manifest intention was to break through the reserve which she had resolved to maintain. They sometimes made her feel bitterly; but she was not uncivil to them; and they generally went home with an impression that Mary Williams was a singular young woman, but that there was no harm in her.

Mary still wanted employment. The full difficulties of her situation now became visible to her. A few shillings only remained to provide for the necessities of the passing week. But she had still the comfort of feeling that she had not been improvident, and the equal satisfaction of knowing she was not in debt. Her spirit did not sink; for she had been accustomed to place a firm reliance on the mercy of the Most High; and she looked for a sure relief to the Almighty Protector of the widowed and the fatherless.

One day that her last shilling remained to her, Mary Williams determined to make a more strenuous effort to procure work as a seamstress. Should this fail, her only resource was to engage herself as a servant, and bestow all her earnings upon her children. But she dreaded a separation. She therefore resolved to conquer her natural timidity, and to solicit that assistance which she felt that she could honestly ask. She stated her case to several tradesmen. Their first question was, "Are you a widow?" She could only answer by her tears. The conclusion was, that her children were illegitimate, and that she was unworthy. She returned home without success and almost heart-broken. For the first

time she sat down, and sobbed aloud in the presence of her children.

Her little Susan clung around her with unconscious indifference; but her Henry felt and shared her grief. "Mother," he said, "you have told us that God will take care of us, and why do you cry?" "My dear boy, that is the last loaf of bread I have the power to procure; and must I see you starve, my children, oh, my children?" "My dear mother, that is sufficient for to-day, and God will take care of to-morrow." The afflicted parent remembered the promises of Scripture: she kissed her children, and wiping her tears, fell on her knees, and silently prayed for a short space. She then turned to her Bible and read aloud the sixth chapter of Matthew. She confided in the promises of her Redeemer, and laid herself down to sleep in the tranquillity of innocence and of faith.

In the morning Mary rose with a resigned heart. She had sufficient left for the first meal of her household; and she sat down to her scanty fare with thankfulness, in the assurance that her "heavenly Father," who "feedeth the fowls of the air," would supply their future wants. They had scarcely breakfasted when a lady of mild and benevolent appearance entered the cottage. "I have heard," said she, "of your necessities and your desires. But I love sincerity; let me know your history without reserve, and if you are deserving, you will not want a friend."

There was something in the manner of this kind visitor that told Mary Williams she had no idle curiosity to shrink from; she felt that her prayers had been heard. Dismissing her children, she respectfully requested the lady to be seated, and in a faltering voice commenced her narrative. She was a woman of good sense and strong feeling; she spoke from her heart, and therefore she at once produced conviction, and obtained pity.

"Oh, Madam!" she said, "I have perhaps been wrong in keeping my sorrows to myself and in thus exposing myself and my poor children to want, it may be to reproach; but though I blush not for my own crimes, I blush for the fault of one I loved, the father of those dear little ones. I was the only daughter of a decent tradesman; a good man, but not a rich one. He died and left me a little money. I was too young and inexperienced to engage in his business; I conquered my false pride, and determined to go to service. About the time that I had formed this resolution, a young man who had been apprenticed to my father returned to town. He possessed many good qualities, which blinded me to the evil parts of his character. I knew that his passions were violent, and that he was habitually indifferent to religion. He paid his addresses to me; and I fondly thought that my influence as a wife might become the instrument of his reformation. We married; and by the help of friends engaged in the occupation which my father had followed. For a short time we were tolerably happy; but my husband neglected the public worship and the private duties of a Christian. My little boy was born. I became more importunate to my husband to think seriously. I could not bear that my child should have an example of irreligion in his pa-

rent. For oh, Madam! if the world smile upon us, and our path be smooth, and riches increase, and pleasures surround us, there will still be a void, if the heart is not with God; but if sorrows come, and sickness fall upon us, and poverty gather round us, and the world forsake us, where shall be our hope, but in those 'treasures in Heaven, where neither moth nor rust doth corrupt?' I was perhaps too importunate to my unhappy George. He became averse to my society. He began to be connected with loose companions. Our business went on badly: we got in debt; my little Susan was born; and" (she covered her face with her hands and wept for a minute) "my little Susan was born, and—my George forsook me." The kind visitor took Mary affectionately by the hand, and implored her to compose herself. After a little pause she resumed her story.

"For the sake of my children I bore up against my sorrows. I endeavored to carry on our business, but I was unsuccessful. Affairs got worse. I called the creditors together. They were kind and considerate. They would have had me continue my shop, and would have accepted a small compensation for their debt. But I was determined not to risk their property. I sold everything, and paid my debts to the extent of my ability. I had a trifle left. I opened a school. My neighbors supported me: and I could have brought up my family: but my poor boy began to hear about his unhappy father. A thoughtless urchin one day told him that his father was a rogue. I thought my child's heart would have broken. I determined that my little ones should not be made wretched by the knowledge of their parent's shame: I gave up my school and came hither, where I was quite unknown. It is my husband's parish; and though I would not willingly become burdensome, I would not, in the extremity of misery, for my children's sake, refuse that support which the merciful laws have provided. May this last sorrow be spared me!"

Mary looked up in her visitor's face and saw that she was in tears. The good lady said nothing; but pressing her hand, left the cottage. In an hour she returned, followed by several children. "Young woman," she said, "I have the fullest confidence in you: these are the children of my servants and tenants; take them under your instruction; make them as good and as religious as yourself; it will be my duty to provide that your care shall procure a competence."

Mary Williams entered upon her duties with alacrity. The liberality of her patroness soon placed every reasonable comfort within her reach. In a few years a female school upon an extensive scale was committed to her charge; and she saw herself the possessor of a neat house, a prolific garden, and an income beyond her well-regulated wishes. Her children were her great solace. They both manifested the best dispositions. Though she sometimes wept at the recollection of the blight which had withered her early love and her domestic happiness, she poured out her thanksgivings when she looked upon her boy and girl, saying in her heart, "Did ever any trust in the Lord, and was confounded? or did any abide in his fear, and was forsaken? or whom did he ever despise that called upon him?"

The benevolent clergyman of the parish had assisted Mary Williams in the education of her boy: at the age of fourteen he possessed a deep sense of piety, upright principles, and a cultivated

understanding. His kind friends undertook to apprentice him. He served his master faithfully and diligently. Susan had grown up into a blooming girl. She was devotedly attached to her mother, and looked forward with delight to the prospect of assisting her in school. They both considered themselves orphans; for the faint remembrance of his father had passed across the infant mind of the boy as an incoherent dream; and the mother, though she never forgot her George, thought it her duty not, as yet, to impart to her children the knowledge of a parent's crime. She had never heard of him, except that he was gone to a foreign country.

Henry had been apprenticed three years, when his master offered him permission to pass a few days with his mother and sister, at the season of Christmas. He gladly accepted the kindness. On the eve of the celebration of the Redeemer's nativity, the happy boy and girl went forth in their joy to collect holly and mistletoe from a neighboring wood, with which they proposed to adorn their mother's cottage. The air was bitterly cold, but they hurried along in the cheerfulness of their health and innocence, unmindful of the blast, and unthinking of sorrow or penury. Their happy talk was interrupted by the moan of a fellow-creature. They looked round and saw a famishing man lying by the wayside. The principle of humanity was natural to them; they did not stop to deplore his sorrows, but they hastened to relieve them. The afflicted man spoke not. Henry was a strong lad, and his feeling for the wretched gave him additional strength. He raised the sinking traveler from the earth, and with his sister's aid, slowly conveyed him toward their mother's cottage.

Mary Williams was engaged in preparing a frugal entertainment to welcome her Henry on the approaching festival. Her boy and girl stayed from home until the night had closed.—She became anxious. The door at length opened, and her children appeared, supporting a fainting and emaciated stranger. She looked a smile of approbation, and prepared to assist in the Christian duty of relieving the wretched. They seated the perishing man by their cheerful fire, and hastened to procure a cordial. The stranger opened his dim and weary eyes. Mary gazed for an instant; and then with an agonizing shriek fell upon his neck. It was her cruel, her prodigal, but her once-loved George.—She forgot her wrongs; she thought only that he was the father of her children; that he was, perhaps, a dying penitent.

The wretched man was slightly roused at this act, but he speedily relapsed into unconsciousness. Mary's good sense pointed out to her the necessity of caution; she tore herself away and ran to implore a neighbor's assistance. She represented the afflicted man to her friend, and to her children, as one whom she had recognized as a dear relative. Rest and nourishment were prescribed to him: in a few days he became sensible to the attentions which were shown him; but he was visibly dying.

With an affectionate regard to his health, Mary did not dare to trust herself in his presence. But the anxious Susan was his constant nurse. The child's sense of the consolation of religion was habitual; and she therefore thought it her duty to read the Word of God to the afflicted man. She and her brother were yet ignorant of the relation which he bore toward them, though they perceived that their mother was deeply interested in his fate. The unhappy man

was at first pained by this endeavor of the lovely and innocent girl: he was next indifferent; but when he sometimes heard her, as she fancied him asleep, praying for his recovery, and as the morning and evening hymn of that pious household came upon his ear, his mind gradually changed; and he at length listened with attention to the inspired Word which the affectionate child delighted to read to him. He was particularly regardful of those consolatory passages which proclaim the efficacy of a sincere repentance, and recalled his interesting instructor again and again to the parable of the Prodigal Son. He one day burst into a flood of tears, and requested to see a minister of God.

The heart of his yet unknown Mary rejoiced at this determination. She hurried to her kind pastor, and at once explained the wish of the afflicted man, and the circumstances of her relation toward him. The clergyman entered the room of sickness. The penitent sufferer briefly

detailed how the thoughts of religion had been awakened by the dear child who attended him, and without reservation related the cruelty of his conduct to his wife and children. He had suffered every species of calamity, which he hoped might be some atonement for his crime; and his greatest anxiety was to hear whether those beings whom he had so injured were alive. If he could receive their forgiveness he should die happy. The kind minister gradually revealed to him that his daughter now stood beside him, and that a superintending Providence had permitted her to be the instrument of his repentance. It is impossible to paint the affecting scene which followed. The son, and lastly the wife, of the afflicted prodigal were introduced to him; and amid the tears of all present, (the good clergyman not excepted,) his Mary gave him the most solemn assurance of her forgiveness and her love. He lingered a few days and then expired.

**THE FARMER'S DAUGHTER.**—There's a world of buxom beauty flourishing in the shades of the country. Farm-houses are dangerous places. As you are thinking only of sheep or of curds, you may be suddenly shot through by a pair of bright eyes, and melted away in a bewitching smile that you never dreamt of till the mischief was done. In towns and theaters, and thronged assemblies of the rich and titled fair, you are on your guard; you know what you are exposed to, and put on your breast-plate and pass through the most deadly onslaught of beauty safe and sound. But in those sylvan retreats, dreaming of nightingales, and hearing only the lowing of oxen, you are taken by surprise. Out steps a fair creature—crosses a glade—leaps a stile. You start, you stand lost in wonder and astonished admiration! You take out your tablets to write a sonnet on the return of the Nymphs and Dryades to earth, when up comes John Tompkins, and says, "It's only the farmer's daughter." What! have farmers such daughters now-a-days? Yes, I tell you they have such daughters. Those farm-houses are dangerous places. Let no man with a poetical imagination, which is only another name for a very tender heart, flatter himself with fancies of the calm delights of the country—with the serene idea of sitting with the farmer in his old-fashioned chimney corner, and hearing him talk of corn and mutton—of joining him in the pensive pleasure of a pipe and jug of brown October—of listening to the gossip of the comfortable farmer's wife, of the parson and his family, of his sermons and his pig—over a fragrant cup of Young Hyson, or capped in the delicious luxuries of custards or whipped creams—in walks a fairy vision of wondrous witchery, and, with a curtsy and a smile of most winning and mysterious magic, takes her seat just opposite. It is the farmer's daughter, a lively creature of eighteen; fair as the lily, fresh as May dew, rosy as the rose itself, graceful as the peacock perched on the pales there by the window; sweet as a posy of violets and clove gilliverts, modest as early morn, and amiable as your own imagination of Desdemona or Gertrude of Wyoming. You are lost. It's all over with you. I wouldn't give an empty filbert or a frog-bitten strawberry for your peace of mind, if that glittering creature be not as pitiful as she is fair. And that comes of going into the country, out of the way of vanity and temptation, and fancying farm-houses nice old-fashioned places of old-fashioned contentment!

["The Hall and the Hamlet," by William Howitt.

#### THE BACHELOR'S COMPLAINT.

Returning home at close of day,  
Who gently chides my long delay,  
And by my side delights to stay?  
Nobody.

Who sets for me the easy chair,  
Sets out the room with neatest care,  
And lays my slippers ready there?  
Nobody.

Who regulates the cheerful fire,  
And piles the blazing fuel higher,  
And bids me draw my chair still nigher?  
Nobody.

When plunged in dire and deep distress,  
And anxious cares my heart oppress,  
Who whispers hopes of happiness?  
Nobody.

When anxious thoughts within me rise,  
In sore dismay my spirit dies,  
Who soothes me by her kind replies?  
Nobody.

When sickness racks my feeble frame,  
And grief distracts my fevered brain,  
Who sympathizes with my pain?  
Nobody.

Then I'll resolve, so help me Fate!  
To change at once the single state,  
And will to Hymen's altar take—  
Somebody.



**MADDER IN OHIO.**—An Essay has been received, kindly prepared for The Farmers' Library by Mr. BATEMAN of the Ohio Cultivator, on the Culture and Yield of Madder—but not in time for publication in this Number. It will appear in the April Number, with some remarks of our own.

The quantity of Madder imported into Philadelphia and Baltimore, from the 1st of January, 1845, to 1st of January, 1847, and into New-York from the first named date to the 30th June, 1847, was 16,804,714 pounds, valued at \$1,620, 415. To hoodwink the Agriculturist, (which all politicians know to be an easy matter,) and to have something to swear by and say, that this article, to the growth of which the soil and climate of many States are both perfectly well adapted, Congress, (composed in great part of representatives of Farmers,) have graciously laid on it a specific duty of *five per cent.*!!! What the *Agricultural Committees* were about when this very encouraging duty was laid is not known. Virtually they might as well have been, as they are always politically—*fast asleep!*

**LIME AND PLASTER.**—In Scotland, where the climate is so much more moist than in the United States, plaster or gypsum is of little use, but lime is very important. Gypsum is of great utility in the drier climate of America; but would not a parity of reasoning show that lime might be used to excellent advantage on our wettest soils?

### PRICES CURRENT.

[Corrected, February 26, for the Monthly Journal of Agriculture.]

ASHES—Pots, 1st sort, '47-8 $\Phi$ 100 lb	5 93 @ 6 —	Staves, White Oak, pipe, $\Phi$ M....	60 — @ —
Pearls, 1st sort, '47-8 .....	8 37½ @ 8 50	Staves, White Oak, hhd.....	45 — @ —
BEEFWAX—American Yellow .....	— 22 @ — 23½	Staves, White Oak, bbl.....	33 — @ 35 —
CANDLES—Mould, Tallow.. $\Phi$ lb.....	— 12 @ — 14	Staves, Red Oak, hhd.....	28 — @ 32 —
Sperm .....	— 32 @ — 33	Hoops.....	27 — @ 32 —
COTTON—From..... $\Phi$ lb.....	— 6½ @ — 9½	Scantling, Eastern.....	17 50 @ 20 —
COTTON BAGGING—Kentucky.....	— 15½ @ — 16	Scantling, Oak.....	30 — @ 35 —
CORDAGE—American..... $\Phi$ lb.....	— 11 @ — 12	Timber, Oak..... $\Phi$ cubic foot	— 22 @ — 25
DOMESTIC GOODS—Shirtings, $\Phi$ y.....	— 4½ @ — 9	Timber, White Pine.....	— 18 @ — 22
Sheetings.....	— 6 @ — 15	Timber, Georgia Yellow Pine .....	— 30 @ — 35
FEATHERS—American, live.....	— 35 @ — 40	Shingles .....	2 50 @ 2 75
FLAX—American .....	— @ — 9	Shingles, Cedar, 3 feet, 1st quality.	28 — @ 34 —
FLOUR & MEAL—Genesee, pure, bbl.	6 31½ @ 6 37½	Shingles, Cedar, 3 feet, 2d quality.	27 — @ 32 50
Genesee, from Western Wheat ..	6 12½ @ 6 25	Shingles, Cedar, 2 feet, 1st quality.	20 — @ 25 —
Troy .....	6 12½ @ 6 18½	Shingles, Cedar, 2 feet, 2d quality.	18 — @ 22 —
Oswego .....	6 12½ @ 6 18½	Shingles, Cypress, 2 feet.....	18 — @ 22 —
Michigan .....	6 12½ @ 6 25	Shingles, Company.....	35 — @ 38 —
Ohio .....	6 12½ @ 6 25	NAILS—Wrought, 6d to 20d... $\Phi$ lb.	— 10 @ — 14
Brooklyn and New-York .....	— @ — 6 —	Cut. 4d to 40d.....	— 4½ @ — 4½
Brandywine .....	— @ — 6 —	PLASTER PARIS— $\Phi$ ton.....	2 50 @ —
Georgetown.....	6 — @ 6 12½	PROVISIONS—Beef, Mess, $\Phi$ bbl..	8 25 @ 9 —
Baltimore, Howard-street .....	6 — @ 6 06½	Beef, Prime.....	5 25 @ 6 —
Richmond City Mills.....	— @ —	Pork, Mess, Ohio, old .....	9 — @ 9 25
Richmond Country.....	6 — @ —	Pork, Mess, Ohio, new .....	10 — @ 10 12½
Alexandria.....	6 — @ —	Pork, Prime, Ohio, old .....	7 — @ 7 25
Fredericksburg, Petersburg City ..	6 — @ 6 25	Pork, Prime, Ohio, new.....	8 25 @ —
Rye Flour .....	4 — @ 4 12½	Lard, Ohio, new..... $\Phi$ lb.	— 7½ @ — 8½
Corn Meal, Western and State....	3 12½ @ —	Hams, Pickled .....	— 6 @ — 6½
Corn Meal, Jersey .....	2 56½ @ 2 62½	Hams, Smoked .....	— 7½ @ — 9
GRAIN—Wheat, White..... $\Phi$ bush.	1 32½ @ 1 37½	Shoulders, Pickled .....	— 3½ @ — 3½
Wheat, Red and mixed.....	1 18 @ 1 25	Beef Hams in Pickle .....	10 — @ 11 —
Rye, Northern .....	— 88 @ — 90	Beef, Smoked..... $\Phi$ lb.	— 6½ @ — 6½
Corn, Jersey and Northern yel....	— 54 @ — 57	Butter, Orange County Dairy .....	— 20 @ — 22
Corn, Southern, white .....	— @ —	Butter, Western Dairy .....	— 16 @ — 18
Corn, Western, flat yellow .....	— 57 @ —	Cheese .....	— 6 @ — 7½
Oats, Northern .....	— 47 @ — 49	SEEDS—Clover..... $\Phi$ lb.	— 7 @ — 7½
Oats, Jersey .....	— 40 @ — 42	Timothy..... $\Phi$ tierce	16 — @ 18 50
HAY—North River in bales, $\Phi$ 100 lb	— 65 @ — 70	Flax, Rough.....	10 25 @ 10 50
HEMP—American, dew-rotted... ton	130 — @ 140 —	SOAP—New-York..... $\Phi$ lb.	— 4 @ — 7
" " water-rotted.....	160 — @ 190 —	TALLOW—American Rendered .....	— 8½ @ — 8½
HOPS—1847 .....	— 5½ @ — 6½	TOBACCO—Virginia..... @ lb.	— 3 @ — 7
IRON—American Pig, No. 1.....	30 — @ 32 50	Kentucky and Missouri.....	— 4 @ — 7½
" " Common.....	28 — @ 29 —	WOOL—Am. Saxony, Fleece, $\Phi$ lb.	— 42 @ — 47
LIME—Thomaston..... $\Phi$ bbl.	— 75 @ — 80	American Full Blood Merino .....	— 38 @ — 40
LUMBER—Boards, N.R., $\Phi$ M. ft. clr.	35 — @ 40 —	American ½ and ¾ Merino.....	— 33 @ — 36
Boards, Albany Pine..... $\Phi$ pce.	— 10 @ — 19	American Native and ¾ Merino...	— 28 @ — 30
Plank, Georgia Y. Pine. $\Phi$ M. ft....	27 50 @ 30 —	Superfine, Pulled Country.....	— 33 @ — 35